COOLTALK vs. NETMEETING: TELEPHONE WORLDWIDE WITH NO LONG-DISTANCE CHARGES

BOARDWATCH
MAGAZINE
Guide to the Internet, World Wide Web and BBS

JULY 1996

NETSCAPE vs. MICROSOFT

Web Browser Features War Swamps the Net

BillGatus of Microsoft

Jim Clark of Netscape

JAVASCRIPT BOZO FILTER
For Easy Web Access Control

CREATING ANIMATED GIFs
A Moving Experience

ANONYMOUS REMAILERS
For Fun & Mayhem

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BOARDWATCH MAGAZINE

Guide to the Internet, World Wide Web and BBS

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All signs point

Whether you're in the business of connecting consumers to the Internet, or just getting your company online, wouldn't you prefer a solution that doesn't chip away at your free time? The Internet Protocol Adapter (IPAD) from eSoft is, simply stated, the easiest way to establish a full-featured Internet presence. (And as a bonus, you can discover there's more to life than babysitting an Internet site.)

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EDITOR'S NOTES

MORE INTERNET SERVICE PROVIDER NUMBERS

We did FINALLY go to the printer with our Summer 1996 issue of our Directory of Internet Service Providers. This was a pretty significant increase in level of effort over our first issue — published in March. We frankly didn't know if anyone would care when we published the first issue of the Directory. But it went on the newsstand in March, and by mid-April it was entirely sold out in most areas and unavailable. We also received a very encouraging response directly here at the office via phone and web orders.

We also received a lot of inquiries for more information. Most of this revolved around some form of what the Internet REALLY looks like, where is the GOOD connection to the HEART of the Internet, and ultimately all revolving around some form of Internet Geography.

So we embarked on a bit of a program to diagram the Internet. We did a bit of research into the Network Access Point architecture that replaced the NSFNet backbone last year, and then scoured the network trying to determine who actually operates national backbones at 45 Mbps T3 speeds or greater. We did 5-7 page profiles on each of these National Backbone Operators complete with a symbological/geographic map of their backbones, prices for connections, POP lists, architecture, etc. The result was profoundly educational for us, and we think will present a view of the Internet that you just haven't ever had available before.

The list of ISPs has also grown from some 1447 in our February database to some 2461 in our May database. We actually survey these ISPs by both electronic mail and voice telephone and gather quite a bit of information not published in the listings about their operations. We aggregate this information into averages and numerics which

we write on a whiteboard and stand around and go "hmmm" a lot without quite knowing what it all means.

Our 2461 Internet Service Providers average some 1598 dialup customers each. This totals some 3,935,000 Internauts accessing the Internet over ordinary dialup telephone lines at 14.4 kbps or 28.8 kbps. We have strong reason to believe that dialup Internauts total almost exactly 60% of those who access the Internet. We would surmise that an additional 2,623,333 Internauts access the Internet via dedicated access connections offered by these 2461 Internet Service Providers. Total population served by 2461 providers would appear to be 6,558,333.

The average price of the connection for dialup is **$19.95** per month which includes some 61 hours of service — on average — with additional hours available at **$1.23** per hour. If we assume that the dedicated access customers ultimately average about the same cost as the dialup customers, it looks like a very conservative estimate of some **$131,166,000** in MONTHLY revenues for this industry or **$1.574 billion** annually.

We also asked these Internet Service Providers what they had invested in hardware and software. The results were a bit higher than we expected, even knowing that it is essentially a hardware/software business. They indicate an average total investment of **$1,072,486** and an average total software investment of **$100,513**. In aggregate, that represents some **$2.639 billion** in hardware and **$247.362 million** in software. The 2461 Internet Service Providers average 20 months in the business at this point indicating a **$1.583 billion** annual market for hardware and a **$148.42 million** annual market for software.

That is what is sold directly TO the Internet Service Providers for their own operations. It doesn't even touch the equipment and software these ISPs sell or recommend to THEIR customers to effectively make the connection with customer premise equipment. And it

really doesn't include at all the business connections sold by several giants such as IBM with their 28,000 business customers or for that matter Sprint IP Services with their 2800 business customers. We're talking generally about the small Internet Service Providers.

Industry analysts are unanimous that the ISP market is consolidating through mergers and buyouts at a fantastic rate, that there will only be a couple of hundred ISPs left by the end of the year, and that the telcos and giants will take over the industry in 1996. They make this literally unanimous analysis based on no data and no knowledge that we can detect. From our perspective, we've added 1000 ISPs since February, and watched a total of 15 go away in the same period. That doesn't look like declining numbers to me.

I've said for at least three years, in print and in public, that there are only two groups that can effectively put new people online — BBS operators and experienced commercial online services such as CompuServe or AOL. The reason for this revolves almost entirely on the customer service issue. This technology is not sufficiently mature as yet to allow any reasonable facsimile of "plug and play." To this day, to get a genuine connection to the Internet that will allow you full use of the connection and full use of the available toys, you still have to enter by hand the IP number of a domain name server. You have to identify a POP3 mail server and an SMTP mail server and a gateway machine. You have to either know your IP number or numbers, or setup for dynamic IP allocation when connected. And you may have to know what subnet mask to use. I agree that this is inexcusably complex at this time in the development of the Internet. But I find myself dealing with these issues almost daily. And they can be difficult to explain even what they ARE. The LONGEST tutorial article ever published in Boardwatch Magazine in nine years of publication was how to get a connection to a service provider sufficiently up to PING and send an e-mail message — using Windows95 that ostensibly has everything you need already built into the operating system.

AT&T's public relations machine has fostered great fear, uncertainty, and doubt in the industry. Reality check indicates they shipped some 600,000 pieces of software and signed up some 150,000 users in just a couple of months by marketing to their 80 MILLION customers a product they were offering for FREE. Eschewing the **$15** per user fee Netscape wanted for their 2.0 release, they opted for an **$0.80** per user fee for the 1.2 version. The most common question they get now is how to update to 2.0 and Netscape has a 3.0 beta available for download. The customer service effort by AT&T was actually valiant, though outsourced. But it's buried. It's buried so deep it is shaping up as the service fiasco of the '90's. AT&T is getting a very bloody nose. And if anyone cares, they don't have any Internet at all. BBN Planet operates a backbone and sells service to AT&T. BBN Planet has also acquired BARRnet, NEARnet, and SURAnet, three regional service providers. Their backbone services are obtained from....drum roll....internet MCI. So in the incestuous world of the Internet, AT&T is selling Internet service it obtains ultimately from MCI. And they are getting slaughtered on the customer service issue, which is their only role in the game.

What is even MORE amusing is the behavior of both Sprint IP Services and internetMCI. Regular readers of Boardwatch will recall that both of these companies introduced, with no small amount of fanfare, dialup services in the $19.95 per month range over a year and a half ago. What happened to them? We predicted they would get slaughtered on the customer service issue. But we never heard. We just never heard much more about it — rumors that after a year MCI had 11,000 people connected on the consumer end.

In doing the Directory, I spoke directly with field level sales people for both these services — several of them in different parts of the country. In frank background conversation, insiders at both companies insisted that I had no idea what I was talking about — I couldn't possibly without living through it myself. It was described as a total bloodbath with grandmas from Biloxi trying to sign up without a modem or serial card or in some cases a telephone line. They couldn't do the customer service for $100 per month much less $20. They did continue to provide it to some dedicated access customers who wanted it from the road, at a go away price and with the advice that they could get an account with someone else cheaper and still access their office over the Internet.
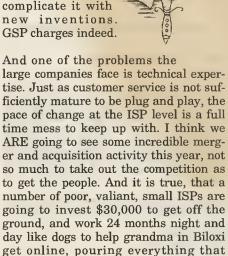
And incredibly, because AT&T has garnered so much press with their program, BOTH companies are going BACK into consumer dialup connections AGAIN with programs this summer, knowing beforehand that they will get slaughtered AGAIN. The network people don't want any part of this but they do work for larger TELEPHONE companies that just aren't going to be flanked by AT&T on this issue. It is not only a stampede of giant buffaloes off the cliff, but some of these bison are making their SECOND TRIP over the edge and they already know how it is going to come out.

Meanwhile, newbies such as AT&T are claiming economies of scale. I find it continually surprising that they don't understand that until this technology matures sufficiently to be plug and play, they are distinctly and specifically DISECONOMIES of scale. It's hard to do 1500 people. It's really, really hard to do 150,000. And it is not proven that you even CAN do a million. All at a time when less than 4 percent of the American public is on the Internet, and more like 30 percent would like to be.

And what of the RBOC? Some days I just can't wait to get to work, sit in this chair, and see what comes in today. PacBell is now the Internet company. They offer dialup service now in four major metropolitan areas as of May. Since they actually do operate the San Francisco Network Access Point under contract with the NSF, and have been the most aggressive RBOC in deploying ISDN, it sounds like if any RBOC can do it PacBell can. Incredibly, they are offering ISP services, but AGIS, one of our national backbone operators, is actually the entity providing it. PacBell is a reseller.

More comical is their dedicated access offering. You can now get a T1 connection direct from PacBell. But instead of it getting simpler, it gets more complicated. You still pay a separate **$248** plus mileage charge for the local loop connection. Then you pay a **$1400** monthly fee for the T1. This is common enough. But on top of that, they have introduced a NEW charge called the GSP fee. GSP is the Global Service Provider Fee. And their home page has links describing this fee if you are really curious. It takes you to the AGIS home page where you find that you get to pay the AGIS T1 charge on TOP of the PacBell T1 charge. I LOVE IT! I wish these telephone companies would take over the magazine business so I could "compete" with them. In fairness, this unbundling seems to be driven by some sort of regulatory restriction

in California. The card the RBOC should play is to make all this happy horse-hockey go away for companies lacking technical expertise. In this case, they seem to actually complicate it with new inventions. GSP charges indeed.

And one of the problems the large companies face is technical expertise. Just as customer service is not sufficiently mature to be plug and play, the pace of change at the ISP level is a full time mess to keep up with. I think we ARE going to see some incredible merger and acquisition activity this year, not so much to take out the competition as to get the people. And it is true, that a number of poor, valiant, small ISPs are going to invest $30,000 to get off the ground, and work 24 months night and day like dogs to help grandma in Biloxi get online, pouring everything that comes in the door back into the business, only to have it all taken away by a giant telephone company.

I guess they'll just have to take their $30 million in telco buyout money, go to the Bahamas, and suffer for the rest of their lives knowing they COULD have made it in a better world. And there will STILL be well over 3000 Internet Service Providers by the end of the year.
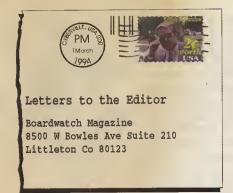
And to Roxi at US West, I did indeed get my home ISDN 2B+D line this month, eight years after Jerry Welch's very kind offer in 1988, I am very happily connected to the Boardwatch office and the Internet at 128 kbps, and I really am loving it. Thank you very very much and I will indeed sincerely try to avoid ever saying another nasty unkind thing about US West again — particularly the bestiality and incest references which were always admittedly a bit over exaggerated.

Jack Rickard
Editor Rotundus

LETTERS TO THE EDITOR

Address correspondence to Letters to the Editor, *Boardwatch Magazine*, 8500 West Bowles Ave., Suite 210, Littleton, CO 80123; by fax to (303)933-2939 or by e-mail to `letters@boardwatch.com`

SERVER STORMS ON THE NET

Jack

Thanks for Boardwatch. A while back I seem to remember reading about a web site that shows congestion on the net similar to a weather map. Does this ring any bells? I'd like to place this on my companies' web site as we will be selling cablemodems beginning this summer throughout the southeast (I'm Director of Internet Services for the Southeast region of Continental Cable/US West?)

Thanks for the reply in advance. I hope your encyclopedic knowledge is as formidable as I imagine.

Doug Perkins
`dougp@ccjet.net`

Doug:

It isn't nearly, but your question isn't nearly as formidable as you imagine either and it is rather one of my pet topics.

John Quarterman at Matrix Information and Directory Services does a rather unique map of the Internet. Actually, he does a lot of them, almost all uniformly rigorous but terribly terribly ugly. He does do this Internet Weather Map that is actually quite engaging. Basically, he runs the ICMP "ping" program on a series of four or five thousand hosts across the United States and measures the latency from the time of the ping until the response. He then "maps" these ping times to a U.S. map using larger circles to represent longer delay times. The theory is that in areas where Internet traffic is high, the ping latency will be larger and so will show up on the map as larger circles or "Internet storms." This is done at four hour intervals and animated in a Motion Picture Experts Group (MPEG) video clip so you can actually watch storms rise through the various four hour cycles of the day.

The maps are actually done for the United States, Europe, Texas, California, etc. and can be fascinating to watch if you don't have much to do with your life. More importantly, he maintains an archive so you can see the relative changes over the months. It's all a little rough, and since PING is a function of server capacity as well as bandwidth capacity of the Internet, it is only roughly true. But we find it fascinating. http://www2.mids.org/weather/us/
John S. Quarterman is the President and Editor

of Matrix Information and Directory Services (MIDS), which examines the construction and demographics of the Internet and other networks in the Matrix of all computers worldwide that exchange electronic mail, and presents that information textually, graphically, and in geographic maps. He's the Senior Technical Partner at Texas Internet Consulting (TIC), which consults in networks and open systems with particular emphasis on TCP/IP networks, UNIX systems and standards. He's a founding partner in Zilker Internet Park, which provides Internet access from Austin, Texas.

We believe Quarterman actually wrote the first published book on the Internet. Given the huge market this has become, I guess I feel that as the pioneer he was typically omitted from appropriate profit in the genre. He is also a co-author of the authoritative text, The Design and Implementation of the 4.3BSD UNIX Operating System, describing a system which has been very influential on the TCP/IP protocols. His recent publication, UNIX, POSIX, and Open Systems: The Open Standards Puzzle relates UNIX programming standards to computer networks.

More recently, Practical Internetworking with TCP/IP and UNIX describes the workings of the Internet in some detail, The Internet Connection: System Connectivity and Configuration tells you how you can connect to the Internet, and The E-Mail Companion: Communicating Effectively via the Internet and Other Global Networks tells you how to use electronic mail throughout the Matrix. He is currently working on the second edition of the book, The Matrix.

Warmest Regards and good luck in cable modem land.

Jack Rickard

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BILLGATUS OF BORG

Hello, there!

I've been buying Boardwatch off the newsstand for about 6 months now, and I may soon subscribe to you. (That's high praise, I've never subscribed to ANY mag.)

I wanted to tell you what a precious resource I consider Boardwatch to be. You are almost always not one, but several steps ahead of any other publication when it comes to ... I guess Computer Mediated Communication is as close a term as I've found to what Boardwatch is about. Anyway, you guys are tops, and you have another loyal reader in me. Keep it up!

The specific impetus for this note was the "Billgatus of Borg" Graphic/Story -both. I was surprised to see a magazine devoted to the "real" online world cozy up to win95. Until I found out what a really cool networking suite win95 had! You gave me some reasons to quit bitching at Microsoft, and with this last issue, you gave me some more.

Bill gates is not evil. Now I really believe that. I don't know whether it was the VERY informative

article, or that Mona Lisa smile on Billgatus that did it, but I believe! Assimilation isn't necessarily evil. It isn't necessarily good either, but in this case, it just ain't evil. It's business, see?

I use win95 for most everything. If win95 can't get it done, I use Linux. If Linux can't do it, I start coding. The important part of all this is that I still use win95 almost ALL the time! Once I've accomplished a given task in four different OS's, I really don't want to ever have to mess with it again. Win95 is far from perfect, but it keeps me from having to relearn how to walk. I'll take that, and call it good.
Cordially

Luke Kilpatrick
`luke@cybrtyme.com`

Luke:

I'm very pleased you find Boardwatch useful. I do wish you'd join the ranks of the prepaid and save that $5.95 every month. You're spending too much and I get too little of it for either of us to really be happy with the exchange.

No, Bill Gates is not evil. He's a very smart man who works long hours and has a few minor personality deficiencies caused by too much time in closed rooms with strange people. But demonizing Microsoft is always good sport and usually profitable and we're not at all above it. The point of the article is that whether we all wanted it or not, the Internet now has Microsoft's undivided attention and things will be different thereby.

In May, more of this became apparent as the Browser Wars heated up. In this issue, I made a mostly failed attempt to make sense of the flurry of new features, products, and plans that will change the Web in dramatic fashion. And frankly, I think there is a certain inevitability in the outcome as 15,000 pretty bright people in Redmond continue to grind away in Borglike fashion at the Internet/operating system interface. There's some badly broken code on the road between here and there, but I guess I see the world a bit like the people at Microsoft do with regards to how software ought to work ultimately.

I'm sure they find great comfort in that <grin>.

Force be with you Luke.

Jack Rickard

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EDITORIAL ON "BANDWIDTH ARITHMETIC"

As always, excellent, the best "read" in the industry. I wanted to add to your comments at the end that the "statistically significant" amount of inter-

net traffic that is intra-metro-area is VERY high, much more than you would expect, and a terrific incentive to boost every means of expanding the local loop, both in capacity and bandwidth.

For example, in a medium-sized midwestern city (120k population), it is as high as 60% w/in the POP service area. This is quite interesting from an network engineering point of view, and for an entrepreneur like myself making business decisions.

A lot of this is of course known to telcos, and some of it to the more enlightened ISPs, but not very many, and those that do know don't talk about it, (and I probably shouldn't either) for competitive reasons, allowing mystery and confusion to remain for a while longer.

It is, however, inspiring to see a well-put statement on the present situation, to let everyone know (at least those that take the time to read) where we are headed, and where to put our efforts. The bottom line is the telcos selling "air", and that false economics is going away, by distributing access to competitors, distributing the intelligence of the central switch to the desktop, and increasing the utility of all the multimedia software accessible to the average user.

Exactly, the telcos should have sold real bandwidth. Your article is the first time I have seen the real advantage for the breakup of AT&T.

mikeg@metro.net

Mike:

Further on that topic, we just finished our Summer ISP directory. One of the things we attempted to do was to describe in some detail the NAP architecture of the post NSFNet Internet and the associated major backbone providers. In addition to the NAPs, they are cross connecting at geographic targets of opportunity at a fantastic pace - which I'm more than a bit fascinated with.

But more to the point, we stumbled on some tiny, tiny Internet Service Providers down in Tucson Arizona that have basically set up their own Tucson Local Network Access Point. In spite of the competition, these guys appear to have seen the same thing you do and have built their own NAP to cut down the traffic that goes OUT of the area via one provider and back INTO the area via another to get across town. I guess I'm thinking that with regards to actual backbone bandwidth, this may be a solution even more economical than faster routers and bigger pipes. For more info on the Arizona situation, contact RTD Networking Services in Tucson at http://www2.rtd.com/connectivity/nap/

Jack Rickard

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RURAL INTERNET ACCESS - JUNE 1996 ISSUE

David,

I realize that you couldn't write about ALL of the rural access providers - but... I can't believe that you missed SoDak Net - South Dakota's largest ISP. We (my wife and I) started out with $13,000 in cash and 3 personal credit cards. My Net experience reaches back about 15 years when I was a civilian employee with the US Army and managed Internet access at Tooele Army Depot in Utah (which included 5 satellite depots in New Mex, Ariz, Ore , and Colo). From there I went to Unisys and worked on TCP/IP for Unisys in conjunction with a couple of Military contracts. Then onto the US National Park Service IN anchorage where I did lot of telecomm work with the remote parks and the Regional office in Anchorage. Finally decided to come back home to SD and when I got here we started looking at bringing Internet to rural SD.

We provide local dial access to over 130 rural communities in every corner of the state. We have close to 900 customers and we are growing at about 20% per month at this time. We worked out

an agreement with a consortium of rural telephone companies to provide local dial access to their customers. This has been a real boom to our business. The rural telcos were also, in most cases, willing to pay for the schools in their service areas to connect to the net. We have over 25 rural schools using our service to get the Net into their classrooms.

We also serve 3 of the larger South Dakota cities - Sioux Falls, Huron, and Watertown - with dial up as well as dedicated services from ISDN to T1. We provide virtual web server for several large companies, we have NUMEROUS small home based businesses, both in the larger communities as well as the rural locations, who serve their pages off of our 2 servers.

Our backbone provider is AGIS (originally Net99) and we run our T1 198 miles from Minneapolis. (We hope to soon bring it much closer and reduce our costs). We use Livingston Portmasters and Cisco routers to manage our Net with our servers running BSDI's BSD/OS 2.1

All modems are US Robotic's Couriers 28.8 - with unlimited service for $30/month. Timed accounts range anywhere from $10/month and up depending on the number of hours that the user desires.

The biggest request is for ag markets, weather info and "how do we put up our own home page". Some users have been subscribers to AOL or Compuserve and use SoDak Net as a local access number and connect to the AOL or CS account via the Internet. This is cheaper than paying for connect charges to these online services.

So if you ever do an "update" on this story feel free to include "South Dakota's Largest ISP" (probably one of the nations largest small ISPs as far as area covered - 75,955 square miles - no, we don't cover EVERY community in that area).

BTW: thought the article was great and brought to light an area - rural communites - that are often forgotten when discussions turn to the Net.

Later,

Pat McClanahan
pat@sodak.net
SoDak Net
info@sodak.net
http://www.sodak.net

Pat,

I can't believe you folks missed the first edition of the ONLY printed directory of ISPs! I've alerted Gary Funk to make sure South Dakota's largest is in the next edition.

I also forwarded your story to Bob Rankin; expect an "ISP Talk" call in the near future.

Best regards,

David Hakala

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INPUT VALUE := $0.02

About five years ago I bought my first PC. Got hooked on BBSing and eventually set up a one line Fidonet node BBS in Memphis using Maximus/Binkleyterm. Had a blast setting it up and helping new users thru Net Citizenship 101.

Alas, all good things must come to an end! I transferred to sea duty three and a half years ago and turned over the reigns of the BBS to my reluctant wife. I was pleased to see the BBS I started (Shadow Rider) featured in the Occult/Metaphysical BBS listing of the current issue. My wife has done an outstanding job creating a very nice, free, special interest board from the bare-bones hobby board I originally set up.

Meanwhile, I was going thru modem withdrawal onboard an aircraft carrier in Alameda. Then I found Boardwatch in a bookstore. It was great! Next best thing to BBSing was reading

about all the interesting things happening i the online world.

When I first started BBSing few people could eve spell Internet... now URLs are pasted all over T commercials and lots of people who have neve used a modem in their life are talking excitedl about the dawning of the "Information Age". Har to say what the online world will look like in th near future. Your magazine has done a great jo showing what is happening now and what may b happening soon.

I was especially interested in the report on cabl "modems" (why people keep using archaic term for digital devices is beyond me). They are ver fast according to the report. Do you think this wil catch on? Seems to me that someone with larg chunks of cash and heavy influence (are you lis tening, Bill? <g>) could really make this take off.

Things certainly are changing quickly. There wer very few PC's onboard the ship when I arrived Now we have a ship wide LAN and Internet emai capability, even at sea. I am sending this to yo while on deployment, as a matter of fact!

You mentioned spending fours years onboard carrier (or carriers) in Naval Aviation. Just curi ous, in which capacity did you serve?

Thanks for the great read every month. Keep up the good work!

PS - Too bad I'll be at sea instead of back in the Bay Area for ONEISPCON.

Tyrin Price
tprice@cvn70a.vinson.navy.mil

Tyrin:

Input value seems to have exceeded $0.02.

I'm publishing your letter with a note to our readers, rather than the usual response.

I received Mr. Price's e-mail above which launched an exchange of about a dozen messages. Many years ago, I was an AQ1 on the USS Midway, an aircraft carrier. An AQ works on radar systems and weapons delivery computers on aircraft. This is precisely what Tyrin Price does now on the USS Carl Vinson.
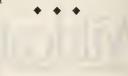
We found we had a lot in common, and I was fascinated by the fact that you can actually send and receive electronic mail on an aircraft carrier now. We sent messages back and forth, timed the transits, and I asked a lot of questions. Since some of it involves the communications capabilities of aircraft carriers, we ultimately deferred the conversation to Lieutenant Commander John Joyner, Network Manager on the USS Carl Vinson. He's prepared a bit of a short article on shipboard connections to the Internet, and we'll run it in Boardwatch this issue or the next as soon as we can get a photo of the Vinson to run with it.

E-mail on a ship has a dramatic effect on the personal lives of those serving onboard. The ability to send a letter and have it arrive on the wife's computer in less than an hour simply changes the way the whole situation works. We found it fascinating. And as our editor at fault David Hakala asks, "Does this mean we can launch stuff by e-mail off of missile ships now?"

I don't think you can - at least with current software. But we do intend to talk about it a bit in future issues.

Again, thanks for opening up the dialogue Ty. Fair winds and following seas.
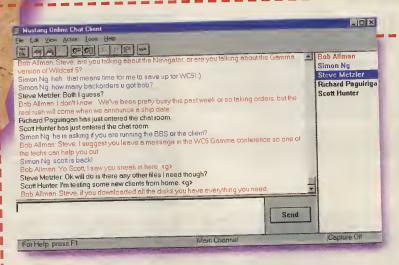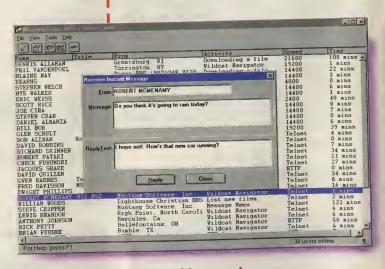
Jack Rickard

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This is your Web Server

Web Server on Wildcat! 5

YOUR APRIL, '96 ARTICLE BY WALLACE WANG

Jack Rickard,

Hello. I am James Norris of Aristotle Internet Access in Little Rock, AR. We are a local Internet access provider for the central Arkansas area and a business homepage design and production company. (Please see our Website at: http://www.aristotle.net) I am an HTML writer for Aristotle, and I am responsible for distributing a monthly newsletter to all of our dialup customers.

We get Boardwatch in the office monthly. We find it to be very informative and keep a copy of it in our lobby for customers to read. Several of us in the office were particularly impressed by the article, "Notes From The Underground - Debunking the Myths of Computer Viruses" by Wallace Wang in your April, 1996 edition. We thought it contained a great deal of useful information and that it was presented in such a way that even a novice computer user could understand.

I would like very much to reprint your article in our company newsletter. We think it is exactly the kind of information new Internet users in the Little Rock area would benefit from. Full credit would be given to Boardwatch and the author, Wallace Wang. May I have your permission to reprint the article?

Please respond at your convenience.

Sincerely,
James Norris
Aristotle Internet Access
jnorris@aristotle.net

James:

We normally print a magazine and are a little touchy about other publications reprinting articles. But anybody trying to sell Internet Access in Little Rock Arkansas deserves all the help they can get. With Mr. Wang's permission, by all means reprint this one article in your newsletter.

Can you still slap a saddle on and ride the mosquitoes around Little Rock on a Friday night like you could when I was a kid? I'm referring to the small ones of course.

Jack Rickard

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GREAT MAGAZINE

Jack -

Just a brief note telling you how much I enjoy your magazine. It reminds me of the old "Byte" or "Kilobaud" mags of the 70s & early 80s.

As a result of Boardwatch reviews of the O'Reilly Website software, we are setting up a site and I must say it was extremely easy. Thanks again and I look forward to renewing my subscription. (I'm another one of those readers who reads the entire mag from cover to cover! More useful info per square inch than anything else I've seen in the business.)

greg@mcaa.org

Greg:

I'm very pleased you find it interesting Greg. The Byte/Kilobaud reference is of course flattering.

Actually, I was a bit of a ByteHead myself. You might find it interesting to note that I sent an article titled TIME AFTER TIME to Fred Langa, then editor of Byte Magazine, in 1986 describing the online time services at the U.S. Naval Observatory atomic clock as well as new doings at the National Bureau of Standards (NBS - now NIST) in Boulder Colorado. The article described the various vagaries of determining what time it was with any exactitude and how to synchronize your PC internal clock (woefully inaccurate devices in those

days) to either of these atomic clock standards for free by modem.

Mr. Langa declined to publish the article noting very little interest in the online world at the time. Boardwatch is largely the result and each year we do some variation on "the time story" one more time just to remind me what time it is in the world - Boardwatch time.

Another side effect of all that is that each time someone sends me an article on something goofy, but slightly interesting, that I just can't come up with the pages to run, I always wonder if in declining the piece I'm about to spawn the next competing publication that's going to kick my ass one day on the newsstand.

Life is very very strange. I like it.

Jack Rickard

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EDITOR'S NOTES - BOARDWATCH MARCH 1996

Dear Mr. Rickard:

First, cudos to you and your staff for putting together one of the most intelligent, informative, and entertaining Internet magazines on the planet. (I figure I've just increased the odds of my letter getting published by 100%. Besides, IMHO it happens to be true.) Keep up the good work, especially the articles dealing with the government's attempts to bring the Internet under some form of centralized control. No, I'm not some right-wing extremist, I just have seen the government bureaucracy in action and shudder at the thought of Uncle Sam being in charge of my access to the Internet.

On to the topic at hand, as an owner of a domain name, I take seriously the problem of Internic registration. Having had a WWW presence for almost a year now, I feel more than a little angst knowing that a organization with much deeper pockets could come along, apply for a trademark and put me in a position where I have to decide between losing my domain name or losing my shirt. Your solution to utilize the geographical domain extensions is a reasonable approach, but, I would suggest another that may make life simpler for the majority of internet users.

Why not establish a new domain name extension? For individuals or organizations that already have a trademarked name, why not have a tmk domain extension. Likewise, for service marks a .smk extension. Internic could require that anyone requesting a domain name with these endings provide documentation as to their ownership. Excepting these "special" extensions the prevailing first come, first serve would prevail.

Maybe a separate fee structure could be established, since usually only large organizations can afford the cost of actually registering a trade or service mark with the PTO (Patent and Trademark Office). If corporate lawyers are going to turn the Internet into yet another legal battlefield, at least their clients could pay more to support the net.

Perhaps someone should have seriously questioned whether trademark protection is reasonably applicable to Internet domain names a long time ago. I guess we'll all end up hiring domain name consultants or trademark researchers to protect ourselves. Maybe we all need domain name insurance just like title insurance on real estate?

Well, that's my two cents. Thanks for letting me get on my soap-box.

Julie Falkman,
CLIA Accredited Cruise Counsellor
Anchors Aweigh Cruise Center, Inc.
(800) 246-3069 or **(708) 897-9106**
julie@anchors.com
http://www.anchors.com

Julie:

It's an idea. But it really sort of begs the question. If I am Boardwatch.com, and you want to be Boardwatch.smk, aren't you still infringing my trademark, profiting from the name recognition I've built, and causing confusion for my customers?

Actually, we have even seen a version of this play out between Massachusetts Institute of Technology (MIT.EDU) and Merit Island Technologies, Inc., (MIT.COM). We have received many suggestions such as yours to establish new top domains. It just doesn't matter. MIT.EDU doesn't want there to BE an MIT.COM, and their lawyers can beat up your lawyers any day.

This actually wasn't hard to predict. Toll-free 800 numbers attained such value that there was a run on them and they were in danger of running out of 800 numbers. So as part of the North American Numbering Plan, some genius came up with the idea of another toll free exchange - 888. All the companies that had 800 numbers rushed out to get the corresponding 888 number. In the few cases where someone beat them to it, they immediately started a flurry of litigation over it.

I don't know what the solution is. What is going on right now is simply unacceptable and has to be stopped at all costs. Right now, the big guys are beating up the little guys and they think that's cool. But by extension, this gets to be big guys beating up big guys and it will get ugly. As I mentioned in an editorial, when Nabisco finds out about the Apple Newton, Apple's problems won't be with anyone named Mark Newton.

David Graves of InterNIC has somewhat courageously agreed to come to ONE ISPCON in San Francisco this August to try to discuss the problem with those who administratively submit most of the domain name registrations - Internet Service Providers. I'm guessing there are few easy answers, but I'm hopeful that something comes out of it. In the meantime, please note the following letter that further illustrates the problem.

Jack Rickard

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Re: MIT.COM

Jack: I Thought this affront might be of interest to you. It seems be a new plague upon the net.. :-(- Same thing just happened to IBMII.COM up in Rhode Island.. :-(

Think I'll put up a Net page at "**http://space con.net/public/mit.htm**"to chronicle this farce.. What do YOU think, ol' friend?? <G>

This message was originally addressed to **Tlo@mit.edu** and a carbon copy was sent to you.

Tom Mckeever
tom.mckeever@mit.com

Ms. Weidemier:

AS I mentioned in my earlier E-Mail (Which you either did not receive, or did not reply to), our Administrative contact (MP99) is out of the country on Government business, and unable to respond. Time grows short on the ultimatum, so, as both the original founder of Merritt Island Technologies, Inc., and it's past President, I am once again submitting our appeal directly to you with cc: to NSI/SAIC, et al..

Merritt Island Technologies was formed in 1992 to work with Law Enforcement agencies in recovery of evidence, and other issues involving security and privacy. A small company, it has been Woman-owned and directed since 1993. It was in 1993 that we applied for (legally) and received the domain "mit.COM", after asking the INTERNIC folks AND your own Postmaster if they felt there would be any conflict with the mighty Massachusetts Institute of Technology. If he has kept records, the message would have been in the Fall of '93 from "tmckeever@holonet.net". The

Millions
of developers

The way we see it, *who* you find in a box is just as important as *what*. In our boxes, you're likely to find millions of talented developers.

Together with our award-winning tools, these developers can help you tackle just about any project thrown your way. More importantly, they can help you stay prepared for the future needs of the marketplace.

Along with Microsoft® development tools, you'll find millions of people who use and support them. Vendors who extend each tool's functionality with OLE controls and add-ons. Numerous third-party resources for training and technical support. Developers ready for hire. Entire online communities, BBSs, and user groups.

At Microsoft you'll find extensive resources too. Our seminars and training events keep

Come see us at ONE ISPCON - Booth #301

INTERNIC conversation was by telephone. Our copies were lost in a HD crash, although they may be on an old tape. In summary: We followed the rules and received our .COM domain.

Also in 1993, Merritt Island Technologies took over and ran the SPACECON/BraveHeart Disabilities and Handicapped-issues BBS, allowing them shared use of the mit.COM domain. Since then, over 600 members use the BBS, with some 200 or so using the internet E-Mail to contact other disabled folks and Medical personnel, subscribe to a number of Disability-specific list-servers, as well as Disability USENET groups. Our mit.COM Domain is, and has been, the vehicle for their Internet accesses for over 3 years. The Disabilities BBS now accounts for 95% of the mit.COM traffic. I doubt they are benefiting from "M.I.T."..

Regarding some of these Disabled, I (a disabled person, myself), have traveled to their homes to help them set up their machines to access the internet through mit.COM's accesses. You are asking us, who do you NO harm, (yet who forward at LEAST 40-50 misdirected messages/week to mit.EDU for you, as some people think all domains end in .COM! <G>) to tell all the disabled folks to go tell everyone they communicate with to change their address to accommodate your apparent insecurity over someone sullying mit.EDU's reputation or somehow gaining some vague "benefit" from usage of mit.COM!! And, to travel to their homes again to set some of them up all over again???? - It is obvious that you are being VERY unreasonable about this matter and should reconsider your spurious complaint.

As it appears, however, that we have had NO choice (in order to SURVIVE), but to request a new domain for the interim. We have done so, under protest, and MERITEK.COM has been duly registered.

However, your demands will now require us to change all Letterheads, Cards, Listings, Search-Engine records, business and personal contacts, accounts, etc. and register a new domain, all at no small expense to us AND to the disabled users of the BBS! - How do you suppose we shall be able cover those expenses? WE don't have the funds to do that. Most expenses have been paid out of our own pockets, with the Disabilities/Handicapped BBS taking a lion's share thereof.

We have always admired Massachusetts Institute of Technology, and were thoroughly dismayed that you had not even asked us FIRST to cooperate before you descended on us with the "strength of our legal position" and "cease and desist" intimidations. And THEN, to get an Ultimatum (essentially) from NSI that leaves us these choices:

B.1: Relinquish our 1993 legally-registered Domain and transfer it to Mass. Inst. of Tech. Ergo: NOBODY at our BBS/Org can use it!!

B.2: Apply for a NEW domain and have our mit.COM domain put on hold after 90 days so NOBODY can use it until this "dispute" is "settled".

B.3: Refuse to change our well-established, legally-registered domain and THEN have "mit.COM" put on HOLD ANYWAYS by NSI, so NOBODY can use it while under dispute! - (AKA: Kiss of death..)

Even if we had a FEDERALLY-Registered trademark, we would have to PUT UP A BOND (an Expense we would have a hard time meeting) to defend OUR right to use OUR domain while you sic your legal team(s) on us.

Note that in all cases, the mit.COM domain which we ALL depend on here, will become UNUSABLE to us at some point, unless we were able to wage an expensive, and no doubt lengthy, legal battle.

Translation: WE lose. - Big guy defeats little guy - Proud, M.I.T.??

Talk about a lose-lose situation. You at M.I.T. probably do not even plan to use, nor do you

QUALIFY as a Commercial operation to use the .COM Domain - you are merely concerned about imagined "dilution of your trademark" and "a false and misleading connection between our institution and your unrelated commercial enterprise in the technology field", by a tiny company and it's Disabilities BBS. Not to mention the the problems of changing the Internet addresses of the 200 or so Disabled/handicapped/blind who use, and have used, this BBS and it's legally-obtained Domain of mit.com since 1993!!

We find it particularly amusing that all your M.I.T. (not MIT) Trademark Patents you sent to us to justify your wish to take mit.COMaway from us were for: "Sweaters, Sweatpants, Sweatshirts, Jackets, T-Shirts, Neckties, Shorts, Shirts, Coffee mugs, coffee cups, pencils, notebooks, rings, Computer Operating and Applications programs and related instruction manuals, and Educational services."

INTERNET Domains seem to be missing from your Trademark patent list..

Again, if you had contacted us first, before lowering the proverbial boom on us, we could have settled this, no doubt, between us without involving NSI and the Media. We already have a disclaimer on our web page at "**http://spacecon.net/public/mit_com.htm**", and have always AVOIDED any suggestion of being associated with your august institution. The only contact with you has been the infrequent, but friendly conversations we have had with your "postmaster" about all those misdirected mit.EDU messages addressed to mit.COM by those previously mentioned folks who seem to think that ".COM" is the ONLY domain.. :-)

This Domain-Crushing has become endemic on the net as of late. I would think you, such a revered hallmark of Academia, would be above it.

In summary: We have been forced by your actions to apply for a new domain name just to stay viable, but AGAIN request you retract your "request" that we "immediately select an alternative domain", and leave us in peace. In the meantime, we have complied with the process dictated by NSI and have secured (as of this evening) the Domain "MERITEK.COM" as a "backup" domain for the next 90 days.

Respectfully..

T. McKeever
(tom.mckeever@mit.com)
(ksc_admin@ids.net)
SPACECON/BRAVEHEART BBS (1:374/22)
(407) 459-0969 452-8969 453-5393 (1200-28800 Baud) (Home of INFOLOG, OTVIEW, & POST_POLIO and CARDIAC Echoes!!)

Tom:

I think it is a thoroughly odious and reprehensible position by MIT. In this one particularly odd case, I would expect you would actually prevail in any actual legal wrangle. They already are .EDU and they should not be .COM as well as long as they are a publicly funded institution. But as you point out, it isn't the outcome, but the process that kills small operators. You could win in a fair fight, but you can't fight at all under our current system.

In any event, thanks for sharing the correspondence. It illustrates the problem in detail and how intractable it really is.

Good luck.

Jack Rickard

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TERMINATION OF MAC COLUMN

Mr. Rickard:

Due to the apparent inability of the post office to process not one, but two, change of address cards related to my moving upstairs from my old apartment, I received yesterday the last 3 months of my magazine subscriptions. Naturally the April, May

and June issues of Boardwatch attracted my attention first!

I was disappointed to read that the Macintosh column has been discontinued and hope that you will reconsider. While only 1% ofBoardwatch's current readership may currently use Macs, it doesn't necessarily follow that they are not interested in Mac issues, even if they don't care diddly about programs running on the Mac (which has been the focus of most columns in the 2 years I've read BW). Depending on whose numbers one believes, Mac users represent 10-30% of the BBS users, and sysops running DOS and Windows based boards might well appreciate reading information and product reviews which would help them support those users. Also, Apple claims 20% of Web servers are Macs, and 40% of web sites are hosted on Macs. Byte wrote a few months ago that30% of internauts are Mac users and that websites hosted on Macs outnumbered those on Windows NT and Windows 95 combined. While those numbers will inevitably fall (I myself am scrapping my 8500 for a 200Mhz P6), it seems to me unfortunate that you would drop the column just when a new audience for BW might be coming along.

Best wishes,
Drew Palmer
tns@annex.com

Drew:

I would question every number you cite by at least one order of magnitude. They are surreal. We have a tiny following among Mac users, but they read us for general online stuff - not for our fantastic Macintosh coverage. HTML is HTML on the Mac. JavaScript is JavaScript on the Mac. And I guess I think we were not contributing widely to the body of Macintosh specific knowledge in any meaningful way. Bill Reefer has labored long and with little support to provide Macintosh specific coverage and to draw support from the Macintosh community. It's time to give it up and devote the pages to something more meaningful for more readers. He has made a good start covering some of the mergers, acquisitions, and assorted comedies coming out of the Telecommunications Act of 1996 - one of my favorite subjects.

Let the Macintosh emblem be stricken from all temple walls, obelisks, and tablets throughout the realm. So sayeth Pharoah. So shall it be done.

Jack Rickard

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YOUR EDITORIAL

AMEN! AMEN! AMEN!!!

Just read your ed on bandwidth. Fantastic! Now I know why Erols is offering ISDN service for the same price as POTS. I work in the Frequency management business, and bandwidth is the key.

But as you've shown, all we need to do is use what we already have! I've been preaching "use glass" between fixed places for years. Doesn't make any sense at all to me to use precious RF bandwidth between two buildings that can't ever move! But of course the commercial radio people get it (the RF) for FREE, whereas they have to PAY for cable Cu or glass. When we finally (!!!) realize the true value of the RF spectrum, THEN maybe we'll use cable when we don't really need RF. BTW, where do you suppose the Billions of $$ really come from that pay those professional athletes?? Not the selling of tickets! It's from the TV revenues; that the broadcast industry reaps from the use of FREE licenses. Think about it.

Thanks for the article; it is great!

Dean
soter@erols.com

Dean:

True enough. But it is my personal opinion that the value of RF spectrum is entirely artificial, and that

in making it valuable we have set back RF technology a hundred years.

We are currently seeing telcos bid at auction for spectrum in areas where it would require cellular or paging revenues of $60, $80, and in some cases more from every man, woman, and child in the area just to pay their spectrum fees to the FCC. This SALE of bandwidth has been widely hailed as the greatest thing since sliced bread in Washington providing windfall revenues of millions. It is ultimately an enormous communications tax and I think it will be viewed as one of the major FCC faux pas of this decade.

I'm a bit of an RF radical myself. I think it would be interesting to take a big fat band of about 500 MHz right in the middle of some useful area and declare it the RF PRIMORDIAL SWAMP. There would be no licenses, no power restrictions, and only one enforcement element, you have to stay within the swamp.

In the swamp, you can build anything you like, you can sell it, you can transmit anything you like. But if someone else builds something bigger or badder that stomps on you and breaks yours, too bad. It's the swamp.

The initial result would be 500 MHz of totally useless RF real estate. But I think the lack of license and regulatory restriction, and the ability to transmit over distance at power, would ultimately be too tempting. Innovators would try to conceive methods of transmission and reception that would use tiny bits of bandwidth and would develop a kind of Darwinian resistance to being stomped on or interfered with.

If successful, we would have to rethink our entire concept of spectrum and its value. If you could transmit high definition television pictures worldwide in 3 kHz of bandwidth, we have a virtually unlimited resource. I am cognizant of the current limitations that make this a laughable exaggeration, but I would point out that 2 Terabit switches over glass were considered a ridiculous notion 15 years ago.

All that said, I don't like radio. And its actually because of the NiCad batteries. If Lithium Ion batteries become more affordable, I might once again carry a pocket cellular. Until then, I'm a man in search of a wall jack.

Jack Rickard
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CHARLES MOSTELLER

Jack,

After nearly rolling in the floor reading the letter from Charles Mosteller published in the May 95 edition, I can see that some things in life don't change.

This gentleman failed to inform you of several things, but that is consistant with his argumentive style. However it is with sadness as well that I viewed this letter. The Library system completely shut down the local areas after this incident, leaving 4000 other patrons high and dry. The area in which he was posting was never meant as he was using it, but that never stopped him, either there, or on the local BBSs. Seems that the local sysops were all "tin gods" because they would not give him the access there he demanded. Hrrrm.... perhaps someone would eventually get the idea there was no "additional access". 95% of the area systems are free, plain and simple. Each person who calls, usually gets all there is to get. However it seems that just wasn't enough for Charlie.

After watching his posts for a couple years, it became somewhat obvious he didn't have a clue about BBS systems, their system operators, or even why most of us run one. Usually those setting up to be a tin god don't last long in this area. The old timers locally won't call, and the new ones quickly look elsewhere. Typical time running a BBS is about 3-4 months before they've chased everyone away, finally give up and shut down.

I got lucky in a sense, I had just moved away, so he never called my system., though he is more than welcome to call it now that I am back. Heck, I can hit the enter key as well as the next person. A former CO put it quite well: "Don't get in a pissing contest with a skunk"

But the boy doesn't have a clue as to the First Amendment about which he raves about. Other than the Library, BBS systems by and large are not goverment owned, so it simply does not apply. And because it did apply to the Library, it choose to shut down those areas rather than continue to deal with someone who could not figure out that the areas in which he was posting was not meant for that purpose.

You're right though, there are thousands of newsgroups that would have him and be welcome, and he would feel right at home. Now if he would just find his way there and get lost.........

Doug Glenn
DougGlenn@kemet.com
The Programmers FORUM!
KBBS #99 **(864)963-0581**

Doug:

Sorry to hear about the closure of the Library discussion areas. It is unfortunate that such discussion groups are sufficiently fragile that individual users can pretty much wreck them, but it is often so.

As to Mr. Mostettler, my experience has been that great animosity can ensue from tiny pieces of electronic mail. Time and time again I have seen electronic enemies meet in person, do about two tall glasses of Ale, and discover they actually had much more in common than they had at issue. I wouldn't judge him too harshly until you've met in a reality zone.

In the meantime, I think it is well worth preserving the maximum number and variety of online discussion areas so that everyone can find a place that suits them and their level of computer mediated expression skills. And while it is unfortunate that this particular venue closed, I guess I think it best that the government not run any of them. I like libraries and librarians, but it might prove useful to leave the discussion areas to private operators.

Jack Rickard
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JNEW PUBLICATION: INTERNET SERVICE PROVIDERS, IMPRESSION & SUGGESTION

Mr. Rickard,

I saw your new quarterly "Internet Service Providers" on the newsstand and, as a happy Boardwatch subscriber, scarfed it up. I wasn't disappointed. You and your staff have a knack for focusing on what is actually significant, in an informative, concise style.

I was surprised to find no discussion of UNIX shell accounts. Unix with Lynx is a great way to browse. It's very quick, and requires minimal equipment. If you really need a graphic, you can download and view it later. Since not all access providers include UNIX shell accounts in the basic service, this would be a useful bit to add to future editions.

Other useful information might be; registration fee (when I called the company you listed in my area, they wanted $25 to sign me on, with a 3 mos. minimum), personal web page included, number of MBs on their disk. In the introduction you suggest Boardwatch Magazine "is probably not a good choice for novice online users". I'd have to disagree. I'm rather a novice (nine months ago I had no idea what Windoze, DOS, and UNIX meant), and Boardwatch is the only must-read-NOW of the three of four computerrelated publications I get. It's all content, no fluff. The discussion of search engines was especially well done and came at a good time for me. The online version of Boardwatch makes it easy to add useful links to my bookmark file.

By the way, my online experience exactly parallels that you describe as typical. Two months ago I signed on to AOL, DOS version since I have a 286. My first month's bill was $75 and the only net access I had was ftp, some newsgroups, and e-mail. Then I got a flat rate provider, learned a little UNIX, and started to have fun! I get a shell account with 10 MB storage, unlimited e-mail, newsgroups, Lynx, Archie and Gopher, and a web page, for $17.50 a month.
Thanks for two excellent publications.
Jim Schippnick
ragnar@darius.pce.net

Jim:

Thanks for the comments and suggestions. The Boardwatch Directory of Internet Service Providers is very much a work in progress. At this point, we have no concept of how to make it economically viable as a publication. We don't know what the format should be. We don't know what should be included and excluded. We don't even know what paper to print it on and in fact, in the summer issue we use two completely different papers in the same book. In short, we haven't a clue what we are doing, we're probably the least qualified to do it, and we're not sure what anyone would use it for.

That said, we have found that a lot of people are puzzling over what really makes up the Internet. And we're seeing a tremendous amount of advertising and public relations work that qualifies, in all respects, as a bare faced lie. There isn't another way to put it. You are hearing things that are not only not true, but are known absolutely to be not true by those that are paying immense amounts of money to say them.

But the Internet is really quite a morass. And it is changing very dramatically right now. So painting a picture of what it looks like to us without any economic incentive to distort, or indeed any economic basis even for the publication, is a challenge. In this summer issue, we include some 2266 Internet Service Providers. But we also detail the NAP architecture of the Internet since the NSFNet backbone was shut down, and provide five to seven page profiles of each of the national backbone operators we could identify. This is where ALL the 2266 Internet Service Providers get THEIR connections. And in aggregate, it probably forms as close a picture to a reality zone Internet as we could pull together.

Should we cover Lynx and text-only browsers? Setup charges? I don't know. But we're taking everything we hear about this new book quite seriously. I'm encouraged you have found it useful. It is my intention that you will find it much more useful yet in future issues. How well we succeed ultimately is just another one of those tests of time and perseverance. But I have a pretty long record of winning on everything I can get wrestled down to just a matter of hard work.

We should have the Summer issue on the newsstand at $9.95 by the time you read this. It is a genuine oddity, but it's published now. We're already starting on the fall issue.

Jack Rickard

WSJ SPOTS TROUBLES OF AT&T AS ISP

Good morning, Jack

I had to laugh this morning at the Wall Street Journal article (page B4) about the difficulties AT&T and MCI are having. Guess what? Poor user support. Exactly what you've been predicting for months.

Keep up the fun column and letter replies. I look forward to each issue.

Paul Hollingshead
phollingsh@mdc.com

Paul:

It will get worse before it gets better. Unfortunately, the PR machine tends to crank out the rollout

**To see what it's like to chat on a
BBS without Chatz, try talking
through only this hole.**

Chatting on a BBS used to be limiting, to say the least. You couldn't control it. You couldn't customize it. Worst of all, you could only chat with a tiny portion of the population.

But now Pluglnz brings you Chatz, the multi-user conferencing system built exclusively for Excalibur BBS — the first and all-time bestselling BBS for Windows. With Chatz, users can connect to thousands of Excalibur systems *plus* millions of Internet users through Internet Relay Chat — without paying for an IRC account!

Chatz puts the sysop in total control with stealth mode, room snoop, room banning, killing and locking. Fully customizable settings, including screen tiles, screen colors, and configurable text, let you take full advantage of your system.

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announcements, and somehow fails to mention the retrenchments and backpeddling later. See my editorial this issue for more on the topic.

If you are quaking in fear of AT&T taking over the Internet Service Provider business, you really don't have a thing to fear but fear itself.

Jack Rickard

◆ ◆ ◆

"N"

Hi Jack,

Just a short note to let you know that I have enjoyed reading your magazine for years. I just received this month's issue and it has a "glaring" error on the cover that I'm sure will keep your mailbox full. The reflection of the "N" in the left eye lens is backwards! I'll keep the subscription though :-)

Regards,
Dave Garner
daveg@crosslink.net

Dave:

I don't get it. How do they make N's where YOU come from? It's the Netscape logo, and you're the only one who has written.

Jack Rickard

◆ ◆ ◆

MICHAEL ERWIN:

It is with great interest that I read Publishing On The Web Part 15 in the April issue of Boardwatch Magazine.

You see, I started reading with Part 1.

You should know that with Part 1 I began teaching a group of high school age students HTML. We had to learn at the rate your articles appeared. My students did not attend "normal" high school classes...they were home students in an independent study program. Some were disabled and unable to attend regular high school.

Your articles made a great impact upon them and the project was a success. We created our own Web Page (with the help of a fellow "wire head" at our San Luis Obispo County Office of Education. The project was on California Missions...each student went with his family to take pictures and research a California Mission in our area. The pictures were scanned and the kids wrote up/programmed the pages they were responsible for.

Every fourth grader in the state of California must do a California Missions report. The idea was for the fourth graders around the state to access and download info from the web site. The project was headed for great success, but as of May 1995 I have not been at work due to illness. I left off (and the kids left off) at Part 5.

Part 15 showed me how fast this HTML stuff has moved!

I want to thank you for providing us curriculum that was current and at the cutting edge of the industry. You had these kids and their parents very excited.

You did well. Keep up the good work.

Regards,

Jeffrey B. Kingston
jkingsto@cymbal.aix.calpoly.edu

◆ ◆ ◆

I give up. I give up!

Received your EIGHTH notice (with NUTS. DARN. FIDDLESTICKS.) today.

Recall. I am one who decided I had no interest in the Internet; your excellent magazine was turn-

ing in that direction. I decided to end my subscription. In tribute to your intense coverage, my thoughts were to take out a subscription if my interests changed.

YESTERDAY, I sent a subscription order to the address given in Boardwatch. I have subscribed. I give up. The magazine is too good to lose a single issue. I am "back in the fold."

Thanks, Jack, for an excellent publication, a valuable magazine.
Regards,
Bob Sullivan
71062.3650@CompuServe.COM

You're forgiven Bob. We're pleased to have you back. And apparently we have cured the problem of renewal notices as well. We want everyone to have at least one. And if it takes eight, then eight it takes.

Jack Rickard

◆ ◆ ◆

WHAT BELONGS IN A HOME PAGE?

Dear Jack:

First, the usual compliments to you and Boardwatch. The writing is uniformly excellent, and it seems to me that the typos have declined recently as well. (Not that I ever minded them.) I especially like the columns on the social and legal aspects of life online—they're a nice complement to the technical articles.

I've been teaching myself how to write Web pages, using just local disk files and a browser. I hope to mount them at an ISP eventually — your Directory will help in this, no doubt. Anyway, as a test project I had put together home pages for myself, my wife and my 8-year-old son, with a family page to link them. I was reviewing them with my wife (ok, showing off) when she asked why did I need to tell people so much about us? And was it safe to broadcast all this personal information to the whole world?

Her reaction surprised me: I hadn't thought I had been that revealing. I had avoided putting stuff like our home address and phone number in the pages. But it seemed natural to put our employers' names and our job titles, as I hoped to create two-way links with their home pages. On my son's page I put his school name and grade level. I had this mental image that we were joining a community, and it was somehow expected that we provide at least some information about ourselves.

My wife's question shifted my perception somewhat. Having my son's school name on his home page meant that other kids could find him, but it also meant that some wacko would know where to find him too. This community I'm thinking of joining: is it a small town, or a big city? In the small town you're not as concerned with muggers as you are with getting along with everybody. They know you, and you know them. In the big city, you keep your hand on your wallet and look for ulterior motives behind others' actions. But you also have a certain freedom to be yourself without worrying about what the neighbors think.

Would I be exposing my family to undue risk by creating home pages for us? Has your opinion changed as the use of the web has grown? And if safety dictates that you can't say anything revealing about yourself on a home page, why have one? Knowing that you have an advanced case of "webulism," I'm looking forward to any observations you or your readers might have about this.

Regards,
Bob Watkins
WatkinsRN@aol.com

Bob:

I don't know the answer to your question, and I rather gather it is one of those where the only

right answer is the one relevant to you personally. The world does indeed have it's quota of whackos, ne'er do well's, miscreants, and general detritus of humanity. One strategy is to "be safe." I would not dissuade you from it. And it is very much in vogue these days.

For me personally, I was called to face this in slightly different form as a young man a number of years ago. I was in the Navy, in Asia for four years. In most of the countries where we visited, the wristwatch on my arm represented more money than most middle class families lived on for a year and in some cases the few dollars in my pocket would support a town. I was a very identifiable target, and were the tables turned, I fear I might have been tempted to mischief myself were I in the shoes of those who saw me walk by. And as a sailor, I was wont to hang out in areas that were somewhat less than middle class even there.

I could be safe, and the logical extreme of that would be to stay on the ship or on base and never venture forth at all. Or I could claim that it was my planet too, we were all passing through, and I had as much right to be wherever I was as anyone there, and travel widely through a variety of lands and peoples gaining a perspective on life on this globe unobtainable by other means.

Suffice it to say I did actually lose a few watches. But I gained much more. Fortunately, I never lost my life. By and large I was accepted and welcomed in the most amazing variety of places almost solely on my really token willingness to learn three or four words of the local language and eat whatever was being served. And the life I've had hasn't been spent worrying about whether I should be in south central LA after dark, or on the back streets of Manila, or Taipei. It is true enough that I may not make it through the parking lot here at the office tonight. And it is even more natural to fear for your loved ones. But I choose to live this way. I would rather do what I like and pay the brief consequences inherent as they come up, than to study every move of every day based on its safety impact.

When you go on the net, you're going out in public. I would advise you to live there as you live everywhere else. I find the online world no worse, nor better, than the world at large, but it is true the food is not as good.

Jack Rickard

◆ ◆ ◆

Dear Jack,

As regular subscriber I find your magazine a pleasure to read from cover to cover. Your articles very interesting and actual.I would like to leave here a simple suggestion: IMHO I consider the font size of your text to small to use serif. The visual is not readable and the over all impression is confused.

Try to use a cleaner font, without serif, and you will have a better visual result.

I hope you understand this message in my poor english!

Best Regards,

Antonio Kleber de Araujo
kleber@openlink.com.br
Corporate NetWorking Consultant
R. Gen. Barbosa Lima 83Copacabana
S. Rio de Janeiro 22011-060 Brasil
tel./fax.: **5521 236-7922**
portable: **5521 985-2101**

Tony:

Yeah, we hear that a lot. We'll work on it.

Jack Rickard

◆ ◆ ◆

Mr. Rickard,

I don't request or expect that you publish this. I ask only that you read it.

I read each issue of your fine pub from cover to cover, not only for your witty meanderings, but also for sound technical advice and real-world views on the net "as it is" not "as we want it to be." I've been a subscriber for several years now and consider Boardwatch one of only two monthly computer technology mags worthy of the "must read" moniker. I even attended ONE BBSCon last year. So as a conscientious reader I felt compelled to convey my sadness at learning that the June Macintosh News column would be the last.

This is not a plea for reinstatement. It's your rag and this is America. You can do what you damn well please and I am for that 100%. I also fully recognize the readership issue. If only 1% of your readers have Macs, it's not economically viable to waste expensive column inches on something your readers don't read. *But this reader did.*

My first computer exposure was in college in 1986. I bought an AT clone that year from a "direct importer.". I'm not an "old timer" by John C. Dvorak's definition, and I can't code in C++, JAVA, or Assembler, but I spent 72 straight hours after bringing that modern miracle home trying to get it to boot from DOS. Turned out it was broken. After hours of long distance phone calls with a small, Taiwanese gentleman, pulling every board out of every slot, every cable from every connector, and putting it all back together again it still didn't work. But I felt really comfortable with computers. I eventually got the unit replaced, joined a computer club and called my first bulletin board. I was hooked.

A year or so later I bought a "screaming" 386SX, got a job as a typesetter using PCs, learned to do some elementary dBase programming and even learned to write some fairly sophisticated batch files. Central to this growth was the abundant information and support I found in the online community.

Soon I was using Ventura Publisher and PageMaker to produce paperback books. And soon I saw my first Macintosh. I was amazed. For what I did it was a god -send, and I began to see Windows 1.0 for the bastardized, pathetic piece of programming it was. GEM was infinitely better, but the Mac was better still. But I kept the trusty 386 at home to feed my online habit. The Macs just weren't good for that.

I guess I was pretty good at the computer stuff. Over the next several years I had an increasingly responsible (and profitable) series of jobs designing and managing ever more sophisticated digital publishing systems. I had Mac boxes, DOS boxes, Windows NT boxes and Unix boxes of all flavors, and, coincidentally, worked with zealots for each denomination. I'm not sure, but I think the technical density of such things is part of the appeal. I've long suspected that the very obscurity and so tenaciously to them. There is a certain sense of power to be derived from mastering something that is beyond the grasp of the average human.

Nonetheless, the more time I spent configuring interrupts, mount points, INI files, etc. the more I liked the Mac. I slowly began to migrate all my personal computing to the Mac. I even began doing some CompuServe and BBS stuff on the Mac. But still I kept the DOS box at home. Just in case.

Today I work for IBM. I'm a field service engineer for the Printing Systems Company and I sell a product that uses Windows NT as it's OS. My job is to see that it's properly integrated into whatever environment necessary—Mac, Windows, or Unix. I use OS/2 systems at the office, inter-company communications systems based on System390 VMS, and the occasional AIX-based RS6000 application. The company has a Thinkpad available for me if I need it , and sometimes I do for presentations and such. And I can get good discounts on true blue Intel boxes.

But I carry a Mac Powerbook as my personal computer. And I bought my kids a Mac Performa for Christmas. If I have to spend my own cash for a box, it's going to be a Mac. Even for telcomm apps.

Yes, the Mac has finally caught up with, and in many cases surpassed, the Dos/Windows boxes for personal telcomm. I established my first PPP connection with an ISP about a year ago. I didn't even know for sure what PPP was, but I read a short Read.ME file, ran an install program and "hooked up." I didn't need six pages of technical instruction from an expert to get it done. I'm grateful. Life's too short.

And while not blessed with a true, multi-tasking, micro-kernel OS, the Mac-based telcom server installations I've seen and used (both BBS and internet) have wonderful automation, simplified management, and a ubiquitous ease of use and user friendliness that I have never found on any other platform. I'm not sure, but I don't think tools like AppleScript or Frontier exist on any other platform. Oh, I know you can program in PERL or CGI, but I don't think that's the same thing.

None of this is meant to denigrate some of the wonderful work being done on the Unix and NT platforms. All things have their place and I'm actually quite interested in the have read with delight your articles on the Boardwatch WWW server. I guess I'm just disappointed. I feel the Mac has a fine future on the internet, despite your dire prediction, and can't help but think that your publication has more Mac users among it's readership than you might think.

I rarely disagree with you, and rarer still feel that you've "missed it." But in this case I feel both. Economic issues aside, I would hope that important developments in the Mac environment will continue to be covered in Boardwatch. To date you have been a beacon of common sense and reality in a topsy-turvy, hype-driven world. It seems to me that the Mac fits that model to a tee.

Cordially,

Terry Frazier
tfrazier@mindspring.com
Atlanta, GA
The word Politics is derived from "poly"—meaning many, and "tics"—meaning blood suckers

Terry:

I'll read it. I'll publish it. That's what I do buddy.

About 18 months ago, with Apple Computer at the very peak of their revenues and income, I dared to predict in these pages that Apple Computer had 36 months to live as an independent company. This caused much mirth and jocularity at my expense. It isn't quite as funny as it once was I guess.

That said, I've not nearly as much for or against the Macintosh as most readers imagine. It's another computer, another operating system, and another set of bugs in my world. But our lonely little Apple column wasn't, in my estimation, contributing much in the way of Apple specific information. And information on the online community is getting LESS platform specific, not more so. The Mac readers we did have, and they were few, weren't reading us to learn anything at all about their computers. They were reading us to learn more about the online environment, and appeared to have adequate tools to connect already.

So we've made some changes. We make a few every issue. I just can't take seriously the "loss" of the Mac column. We kept Reefer, a consumate professional in the writing end of things, and he has new work to do. I don't get the point of having a Mac column given the direction we've taken over the past few years. So it is gone. It is not just that I don't think we'll lose any significant readership, I don't even think we'll lose the Mac readers we have.

Jack Rickard   ◆ ◆ ◆

THOMPSON ARTICLE

Jack,

Thompson's article re the internet was right on track, as far as I can see. He put my own thoughts into words better than I could. I'm hopeful that the future will be brighter than the present. I'm not totally pessimistic, given the rapidity of change in the industry. I'm still reading most of the articles in Boardwatch. I am fortunate to have a local BBS, The Nashville Exchange, that provides me with many gigabytes of info, files, help, amusement, and PPP & SLIP access when I want it, all for $92 a

year, 2 hours a day, or $182 unlimited access. When I read in Boardwatch some of the charges for similar systems I am amazed. I can't imagine that type rollercoaster lasting very long. By the way, BellSouth provides ISDN here for $20 a month. I think we have a lot going for us here.

As always, enjoy the heck out of the magazine; read the editorial and letters to the editor, and always find several articles that fit my interests. Love Dvorak.

Best regards and good luck in Frisco!

Ray Walker
ray.walker@nashville.com

Ray:

Sounds like you're getting on line at the price you want to pay and the place you want to pay it. That sounds good to me. One down, 263,523,393 to go (U.S. only).

Jim Thompson appears to be attempting to inject a note of net reality into the euphoria of these pages. We'll allow it. We like euphoria, and we like reality just as well.

Jack Rickard   ◆ ◆ ◆

REQUEST FOR INFO

Many months ago, I moved to the Philippines. While in the US, I subscribed to your magazine. I remembered an article that showed how you hooked up you office with servers as well as the IPAD solution and web server from Esoft. I was wondering whether it would be possible for u to tell me which month this was in 1995 so that I can look it up. I have also asked our office in the States to restart the subscription to your magazine as well as to purchase all the back issues from June 1995 to the present. I now work for a company that is asking me to install a similar setup as your office's and I've been frantically looking at my old issues but could not find the article. If I remember correctly, my subscription ran out mid or q3 last year.

Thanks for your help and more power to your magazine. It's a great resource and one that I realized to be of great value, now more than ever since my future depends on it. Thank you in advance for your help and assistance.

airwave@mnl.sequel.net

Airwall:

The article you seek was our June 1995 issue where we diagrammed our setup pretty much from the wall jack to the web server. We've actually changed it little since then. We now have a BSDI UNIX box in the corner that we make do funny things in the night and make those UNIX noises. And we've added several WindowsNT servers. This lets us try almost any web server software by simply pointing it at our HTML documents on the Novell file server and changing some machine addresses. We can try three different web servers running on BSDI UNIX or WindowsNT in a single day without a user missing a stroke or even being able to tell the difference in most cases.

Beyond that, we still use the IPAD, a Novell Network, etc. So it it has been a remarkably durable configuration. ESoft began shipping the released version of their Internet Protocol Adapter (IPAD) in April and we're seeing a lot of smallish ISP's lunge at this do all box to start offering SLIP/PPP accounts and mail services on a shoestring. By way of disclosure, a lot of the original design sort of leaked off a pad of paper on my desk containing a wish list of things I wanted to do but didn't want to pay much for. So I WOULD like it, it does what I asked for and more by design.
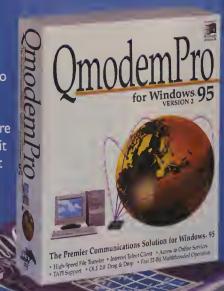
Incidentally, we have all back issues back to October 1994 on our web site at http:// **www.board watch.com** *with a full text keyword search engine as well.*

Jack Rickard

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ISP TALK by Bob Rankin

**16 year-old ISP
Mike Krause and
mentor brother, Daniel**

EXCHANGENET'S MILLION DOLLAR TEENAGER

Michael Krause is a successful Internet service provider. His Cleveland-based *ExchangeNet* service is bringing in a cool million dollars a year, and Michael tools around town in a shiny new forest green Jeep. Like a lot of ISPs, Michael works long hours to make his business successful. But Michael Krause is different than most other ISPs... he's *sixteen years old.*

At the tender age of fourteen, Michael approached his older brother Daniel (a marketing rep for a securities firm) about converting his hobby BBS into a full-blown Internet access point. But the estimated **$100,000** startup cost was a bit steep for brother Dan. So Michael ran the numbers again, this time serving up a workable plan that came in at around **$25,000**, and his dream became a reality in August, 1994.

Michael and his brother originally thought their venture might bring in some extra pocket money, but it's become much bigger than that. In just two years time, ExchangeNet has grown to serve over 5,000 customers in the Cleveland and Akron, Ohio, area. Dan Krause projects that revenues will top **$1,000,000** in 1996.

For about a year, Michael ran the fledgling business pretty much on his own in the upstairs portion of his parents' home, supporting 500 customers, keeping the books and tending to a 486-33 computer with four 14.4 Kbps modems attached. But he gives his brother a lot of credit for helping to make ExchangeNet a success. "Daniel coached me through supporting customers the right way... and guided me as to how we should be managing our money," says the younger Krause.

Michael, a junior at Hawken School in Cleveland, attends classes for half of each day and then heads for the office, where he puts in another six to ten hours each day. Although his grades have dropped from straight As to mostly Bs and Cs, Michael isn't sweating it. After all, he's helped to build a $100,000 a month business, and has plans to stay in the ISP game for a year or so after high school before heading off to college for music or psychology studies.

GROWING UP WITH TECHNOLOGY

Like many kids his age, Michael grew up surrounded by technology. His first computer experience was at the age of six, when his father Sheldon brought an Apple II home. The youngster took right to bits & bytes and before long was asking for software instead of toys. At the age of eight, Krause won an award from Apple for designing a computer graphic.

While he was in middle school, Michael operated a Mac software BBS which he says was the largest of its kind in the Cleveland area. Running a BBS was definitely a factor in inspiring him to launch an Internet provider business.

If you think it takes an expert in Unix system administration and TCP/IP networking to make a go of it in the ISP business,

think again. "I only knew Unix at a user level when I started," says the teenage wunderkind. "But I set goals for myself and day by day I learned everything I needed along the way."

EXCHANGENET COMES OF AGE

As ExchangeNet goes through rapid growth, Michael knows that he can't do it all and still keep up with the demands of school and social life. With that in mind, the company has hired a dozen people to help with tech support, and Michael's role is diminishing. "I'm just one out of fifteen people here now," he says. Lately, ExchangeNet has been taking on 10 to 12 new customers a day, and the rate of growth seems to be increasing.

Accordingly, ExchangeNet is investing heavily in staff and new equipment to ensure they provide the best possible service. Today they operate a "very standard looking" network of Pentium PCs running BSDI Unix, connected to Livingston Portmasters that talk to the Net through a Cisco router and two T-1 lines. They are constantly adding new modems and dialup lines to keep customers from getting a busy signal. At 400-plus incoming lines and around 5000 customers, they have a very impressive 12:1 ratio.

The Krauses are very happy with their hardware and software setup, and Michael says he wouldn't change a thing even if money was no object. Would he bring in Sun workstations to replace the PCs? "No, because processors aren't that important, it's really memory that counts. Our setup is really stable and reliable now, and it would require a lot of time to re-learn if we went to Suns."

One major glitch they encountered was the unreliability of the USR Sportster 33.6Kbps modems. Often the Sportsters would drop carrier or fail to negotiate a lower speed with slower modems. When USR refused to take the modems back because the Krauses had discarded the packaging, the brothers junked seventy Sportsters in favor of Motorola Lifestyle 28.8s. Carrier loss and negotiation problems have all but vanished.

Of course they have their fair share of "interesting" users. One angry woman called tech support to complain about her husband downloading porn. Another couldn't understand why she was having problems connecting after just stuffing the phone line into the back of the computer (no modem or serial port). According to their tech support, people really do call in asking where the "ANY" key is located!

One customer who goes by the name "Grumpy" regularly gives tech support a rough time. "He'll call in at 7AM and complain that the load is too high," says Michael. "But if anyone bad-mouths Exchange-Net, he defends us. We love him though... he'll probably stay with us forever!"◆

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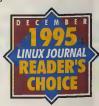
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TECHNOLOGY FRONT

by Jim Thompson
Western News Service

WILDCAT! 5

After much anticipation, Mustang Software, Inc. has released its newest and most advanced online system — *Wildcat! 5*. This full-featured program combines the features of a BBS with the ease of use and familiar interface of the WWW.

Jim Thompson is Managing Editor of Western News Service in Los Angeles, California. He also manages the Marlboro Racing News BBS. CompuServe: **72777,2677**, MCI Mail: **321-4127, mailto: jim.thompson @wnsnews.com**

Described as a BBS/Web hybrid, this client/server application is a true 32-bit system that runs under Windows95 or WindowsNT and provides BBS features along with Internet access. This is an exciting new program that allows for the creation of an interactive multimedia system over dial-up lines, local or wide area networks, the Internet (telnet) and the World Wide Web.

> *"Just about everything that I have complained about concerning the Internet and Web sites, has been addressed by Wildcat! 5."*

"Wildcat! 5 is the ultimate intranet solution. It combines interactive messaging, file library services, chat and other BBS-style features with Web server technology. Along with this we have moved away from ANSI and RIP graphics to HTML as the backdrop on the graphical side," said Jim Harrer, president and CEO of Mustang Software, Inc.

HTML AT THE CORE

According to Harrer, the decision to use HTML was a key element in the direction of the company. "There were many important factors in the decision of our vision team to use HTML. Among them was the fact that there are no limitations on authoring tools available and there is no limitation on tools to convert to this format," notes Harrer.

Another important step in the process of deciding what was needed was the decision to go to a client/server system. Harrer admits that HTML does have a number of limitations but insists that "virtually all of them can be solved" under a client/server

system. "Things that we can't do easily with HTML, such as message conferencing with quote/reply and spell checking, can be solved with a client program. Chat is another example; under HTML this can be quite ugly, but with a client program we can do it very eloquently. This gives us the best of both worlds. We have HTML as the backdrop, it is the menuing and navigating system, and then we can drop clients on top of that to achieve the power and flexibility we need," said Harrer.

TRUE CLIENT/SERVER

The client/server architecture of Wildcat! 5 provides a highly efficient operating system that takes advantage of the power and speed of the Windows 95/WindowsNT platforms. It also means that the sysop has complete flexibility. The system can be run on a single PC or the processing can be distributed over a TCP/IP network. Besides allowing for a much higher line count, the use of a TCP/IP network (which is built into Windows95 and WindowsNT) provides several significant advantages. By separating client and server modules and then sharing resources through the core information server, security and overall performance is greatly improved. It also means that the system can be fully updated and modified while online.

Wildcat! 5 consists of a number of modules which interact with the server and a caller terminal or browser program. At the heart of the system is the *Server Module* which provides the base functionality for "processing all database and configuration requests through the API structure." The server is loaded first and interacts with all modules. It can also be used for local network logins. One of the best features is that both ANSI and graphical connections can be established on the local server machine. This can be accomplished even if you have the entire system running on a single PC, allowing you to check all aspects of your system without establishing a separate connection.

When running under a TCP/IP network, the server executable runs on a WindowsNT server or workstation and the client modules are run on networked PCs which are running either Windows95 or WindowsNT. This intelligent approach to the operating system and platform means that you can start with a simple setup on a single PC and then expand as your needs and your system grows.

The 32-bit platform of Windows95 or WindowsNT provides for a high number of connections via modem, telnet, HTTP, etc. Of course, the exact number of user sessions is determined by the computer processor. Additional servers can be set up to accommodate more sessions. In a typical TCP/IP network

setup, you might have one PC dedicated to Server and TCP/IP connectivity which includes WWW access. Another machine might be attached to a rack of modems and running a copy of the modem controller client. Additional modules such as HTTP or telnet can be run on this same machine or on other machines depending upon system load.

Security is increased in such a system since the "server portion of the system is established in an area on disk with restricted user access. The server controls all access to messages, files and other system information. Requests are submitted to the server by all support programs and third-party utilities through an Application Program Interface (API)," according to Mustang Software.

One of the main projects for Mustang is what they call "server independence." According to Harrer, this will allow you to "run Wildcat! on the same machine on which you are running Netscape Communication Server, Netscape Commerce Server or Microsoft's IAS Server so you can share port 80. We hope to have this operational sometime in June of 1996."

On the sysop end, the various processes of the system are carried out by a series of "modules" which communicate with the server. For the user, the Wildcat! 5 Navigator (Browser) is their window into the many features of the system.

CHOICE OF BROWSERS

A Wildcat! 5 system can be accessed with any standard ASCII/ANSI terminal program, the Wildcat! Navigator, Netscape or Microsoft Internet Explorer browser. Those calling with a standard terminal program, of course, can only establish a connection via a direct modem call and will have access only to the ANSI/ASCII menus. Those calling with the Wildcat! Navigator can access

via a direct modem call or through the Internet via an ISP and have access to all features and menus for which they have proper clearance.

Wildcat! Navigator has a look and feel that is similar to the Netscape browser. Although it does lack many of the features found in browsers like Netscape and Microsoft Explorer, it is solid and easy-to-use. Wildcat! Navigator is free and available on the Mustang Web site (**http://www.mustang.com**) and other Wildcat! systems.

At the time of this writing, those using browsers other than the Wildcat! Navigator could view all HTML files but did not have access to such "BBS features" as chat and messaging until downloading the appropriate client programs. Mustang calls this "browser independence." During my tests I had no problems using Internet Explorer with the Wildcat! 5 clients.

According to Jim Harrer, the next step is "dynamic HTML." "This will allow one to access all areas of a Wildcat! 5 site, including messaging and chat, using Netscape and Internet Explorer without the need to download our clients. This is important for people coming in on a Macintosh or Unix platform," said Harrer. Dynamic HTML was in the works at the time this article was written and Jim said he "fully expected" it to be available by the time this article is published.
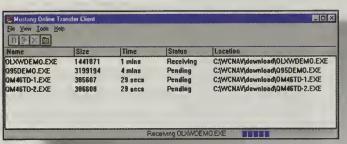
Harrer adds they will soon have the ability to allow anyone who dials directly into a Wildcat! 5 site via modem to establish a true PPP connection. "This means that after you connect, you can launch any browser because we are taking care of the PPP slot. The advantage is that you can use Internet Phone, Netscape or any other Internet product that comes out. It will also allow any Wildcat! 5 site to truly be an ISP without all the headaches you have to go through now to become one," said Harrer. In Harrer's words, once this feature is enacted, a caller will be able to "connect using the Wildcat! Navigator, any standard terminal program such as Qmodem or Procomm, Netscape or you

can connect coming through Navigator and then load Netscape."

Harrer expects to have the PPP fully functional, operating on Windows, Windows95 and WindowsNT and shipping "by the end of summer."

WEALTH OF CLIENT PROGRAMS INCLUDED

The base Wildcat! 5 package includes a number of client programs: the *Online Controller* Client Module which answers all connection requests from dial-in lines, the *QWK Echo* Client Module which handles QWK mail processing, the *TAPI* (Telephony Application Program Interface) Client Module which "talks to TAPI-aware add-on cards or hardware that offer ISDN, X.25 or other connectivity," and the *Message*

Sysop Utilities Designed for a Web/BBS

Client Module which provides management of all e-mail functions (create, read, reply, search, etc.) and includes an integrated editor, an address book and even a spell checker.

The *File* Client Module (also included in the base package) is both easy to use and extremely powerful. The user is presented with a file browser similar to that found in Windows95's Explorer, making it easy for even the first time caller. In addition to the name, size and date of the file, a one line description is offered to the caller. Extended descriptions can also be made available. Files can be listed by name or by icon and sorted by name, size or date. If the caller still cannot find what he/she is looking for, a powerful set of search filters is available. Using the search is very easy — just enter the search crite-

ria and select the folder(s) (file areas) through which to search. It's simple, fast and powerful.

The download is handled automatically and seamlessly. If it is a large file, you can do other things with full confidence that the file will continue to download in the background. You will also find a link to the mail system allowing a caller to send a message to the uploader. The actual upload/downloads are handled by the *Transfer* Client Module which works with all other clients to transfer files when requested.

File Transfer Client

The *Who's Online* Client Module allows users to interact with one another and to see who else is logged on. You can also send instant messages to others and invite others into a chat session. Callers can customize the amount of time between refreshes so they can continually monitor who is calling. This module works in connection with the Chat Client which provides "real-time conferencing." This includes multiple chat areas and a "whisper mode" for sending private messages. As with everything else in Wildcat! 5, the chat area is extremely easy to use and understand. Features like session capture and a scroll back buffer make it extremely functional.

The *Personal Properties* Client Module rounds out the base package. It allows callers to review such statistics as connection time, file transfers, messages written and account balances. This is another one of the many features of this powerful system that gives users a level of functionality not found in most online systems.

INTERNET CONNECTIVITY

An optional *Internet Connectivity Package* (ICP) allows you to fully integrate your system with the Internet. Through it, you can make all the resources and features of a Wildcat! 5 system (including all of the BBS functions) available to anyone entering your site via the Internet (either via a telnet session or the WWW). It also makes the Internet accessible to those who call directly to your system.

With the ICP, users who call in via modem with any ANSI terminal can establish an Internet e-mail address, telnet to other Internet locations, access files via FTP and take part in Internet newsgroups. Those who call in using the Wildcat! Navigator can do all of this plus surf the Web.

Included with ICP is a *World Wide Web Server*, allowing one to publish on the Web and for anyone on the Web to access the site. All "public" Web pages can be acessed by all the popular browsers running on Macintosh, Amiga, PC or Unix based systems. Those using the Wildcat! Navigator can access all areas of the system including file, chat, message and Web pages for which they have proper security level access. Additionally, Navigator users can "surf the Web" beyond the Wildcat! 5 system to which they are connected. You can also offer your users their own Web pages. The system provides support for most tags under HTML 2.0, Netscape 2.0 and Microsoft Internet Explorer extensions. Support for HTML 3.0 is reportedly in the works.
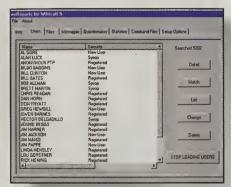
With ICP, full telnet functionality is available to any caller. It also responds to "inbound anonymous or user-id specific FTP (File Transfer Protocol) file requests and supports inbound and outbound FTP connections." The ICP also supports e-mail and Usenet news through UUCP, which can automate Internet mail tossing and supply Usenet news to all callers.

According to Mustang, "In the coming months the ICP will include support for Simple Mail Transfer Protocol (SMTP), Dynamic HyperText Markup Language (DHTML), and Point-to-Point Protocol (PPP). The SMTP module will give you the power to become an ISP as noted above. The DHTML module will make every option on your Wildcat! 5 system available to surfers on the WWW no matter which browser or platform they have."

REPORTS AND STATISTICS

Another option module, *wcReports*, (modeled after Pro Utilities for Wildcat! 4) provides sysops with a wealth of reports about their system and their users. Among abilities of wcReports is the generating of demographic and marketing information about users, the printing of mailing labels and the generating of usage statistics. Information can be exported to other formats including dBase. Filters make it possible to select users by security level, dates, etc. An extended file handling system allows for creating lists for download, purging your system of files with no activity and changing flags. Message management tools allow for the purging of a message base, exporting of messages to text files and browsing through conferences. The module further allows for the creation of graphs and reports based on answers to questionnaires and polls.

System and User Reports Included

The *wcEXCHANGE Mail* Client module provides a link to Microsoft Exchange using the Windows Mail Application Program Interface (WMAPI). The program polls the BBS message files at regular intervals (determined by the sysop) for messages addressed to the user, then places those messages in the user's inbox. wcExchange allows for the delivery of any remote messages from the Wildcat! server (including internal e-mail, Internet e-mail and newsgroups) to the Exchange inbox folder. It can also collect public messages in Wildcat! conferences and forward them to conference folders in Microsoft Exchange.

Mustang also offers a *Custom Connector*. This is a version of the Wildcat! Navigator with a custom front-end and custom graphics. "Online system developers can have a unique logo-branded logon tool to market their online system like America's largest online service, American online," said a spokesperson. After providing Mustang Software with color art, system name and direct dial access/signup number or Internet address, Mustang sends you everything needed for distribution on a master CD.

MORE TO COME

Several other modules were planned or near completion at the time of this writing. Among those slated for release in early June (and which I have not seen) is *wcSubscribe* which will process checking and credit card information. "We worked with ATS (Automated Transaction Systems) to automatically capture check data and take subscriptions online. If you have a merchant account it will do online verification of credit cards. The idea is that if you want to sell something on your system it will verify information within six seconds and process the order," said Harrer.

Another module that should be available in June or early summer is *wcCasino* (note that the product may be released under a different name). At the time of this writing, the plan was to include craps, roulette and blackjack. "We built a lobby with an ATM machine where you can withdraw cash. You can join any game, sit next to people, send messages to others — there's lots of fun things," notes Harrer. Mustang is also "looking at" adding other games like hearts, gin rummy, chess, checkers and stratego.

Several other modules are also planned for the near future. These include: (1) *wcBilling* which will allow for billing of "any action performed on your system. You can bill every time someone downloads a file or every time they visit the site or bill based on an activity. You can also send out invoices and generate reports." This module talks to the wcSubscribe module. (wcBilling is scheduled for release "late August or early September.") (2) an *NNTP* (Network News Transfer Protocol) Module which will provide NNTP message and mail processing from an Internet NNTP server. (3) *wcODBC* Open Database Connectivity module which will allow access to any ODBC compliant database. (3) *wcIRC* Internet Relay Chat module. (4) weFax which will allow for faxing from and into a Wildcat! system. The plan is to allow for the system to "receive both a fax or a data call then direct a fax using DID processing to send a fax as an attached file to someone on the system. Also it will allow one to select a document and have it faxed anywhere."

CONCLUSIONS

The people at Mustang Software, Inc. have not only been paying attention to the direction of the online world but also listening to their customers — a combination that is often rare in the high energy world of computer software developers. With Wildcat! 5, Mustang has addressed the major concerns of sysops. They have also gone a long way toward eliminating the worries and frustrations of the often confused and more often neglected users.

Wildcat! 5 (originally called "Annihilator") does lack some features that many sysops will want. One example is that there is no CGI (Common Gateway Interface) support. However, Mustang has made it clear that they are committed to providing their users with the tools they want and need. In the case of the CGI support, it should be incorporated by the time this article hits the newsstand. Mustang is also working on a long list of other additions and enhancements, and is working closely with third party developers to bring even more features to the system.

At times, it seems that Jim Harrer and his team have been reading my mind. Just about everything that I have complained about concerning the Internet and Web sites, has been addressed by Wildcat! 5. They have taken a major step in the process of bringing all the features and abilities developed over many years by BBS sysops to the World Wide Web. It may even be the beginning of a return to the personal services and unique feeling that was once an integral and important part of the BBS world. There is a "personality" that BBS operators have been able to infuse into their systems that, up until now, has been missing from most Web sites. With the addition of "BBS tools" to a Web site, perhaps this "personality" will soon replace the sterile "institutional" feel of most Web sites.

I am also glad to see that Mustang, unlike some software developers who seem to want to prevent anyone from having access to their technology, is encouraging others to work with them. For example, you can purchase the full code for Wildcat! 5 from Mustang Software (wcCode), allowing the average sysop to completely customize their own BBS or Web sites and third party developers to properly integrate their programs with the core system.

This willingness to share also means that no segment of the public is being shutout. Mustang is aware that their system must be accessible by those using any of the major PC browsers and those using a Macintosh. This policy of openness is both refreshing and wise.

I am not a big fan of HTML because of its many limitations (primarily the inability to display columnar text) posed by this language. However, I fully understand the logic in choosing this as the "backdrop" for Wildcat! 5. Because of the wealth of authoring tools, HTML is easy to work with and provides a familiar interface for uses. Judging by the approach they are taking, I can also assume that Mustang will be adding any new enhancements of HTML to Wildcat! 5. I would also hope that they are poised to add additional programming languages as they emerge and become prominent on the Internet.

Wildcat! 5 is a new product and does need some maturing. However, it is one of the most promising online systems that I have seen. It is easy to install, easy to maintain and provides most of the tools needed to create an exciting online system.◆

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COSTS:

Wildcat! 5:

$149 (2-line)
$349 (16-line)
$699 (32-line)

$199 (8-line add-on)
$699 (32-line add-on)

wcExchange:	$499
wcCode:	$149
wcCode Plus:	$349
	(ANSI Source for WC5)
wcODBC:	$799
wcReports:	$149
wcSubscribe:	$ 99
wcBilling:	$149
Custom Connector:	$500-$2,000

(depending on line count. Renewable annually at a reduced rate.)

WEBWATCH

BABB'S BOOKMARKS by Chris Babb

BROWSER PLUG-INS: GOOD, BAD AND UGLY

Back in February, 1996, I took a look at some of the exciting capabilities being developed for the Internet in the form of VRML sites. I also made a few comments concerning Java and took the briefest of looks at an emerging browser technology called Plug-Ins.

In the 6 months or so that have passed, my opinions concerning VRML are exactly the same now as they were then. As everyone has seen (or more to the point, hasn't seen), VRML is still mired in the mud of development with nothing very substantial to show for it except a huge pile of browser add-on software.

My opinions concerning Java are also still the same. The only real development that seems to be happening is that everyone and their brother is tripping over themselves to pour their cup of the Java pot and the store shelves are overflowing onto the floor with books of all shapes and sizes that extol this "next generation" of programming languages.

Well, even though Java is supposed to be the elixir for the woes of Internet standardization, every day seems to bring a new flavor – smoother, tastier, more powerful. How about sticking to one flavor and form so that someone can actually figure out what to do with it?

On to the stuff that is real.

Plug-ins are currently the most useful browser enhancement. The variety and quantity of plug-ins that have become available in the last few months has astounded me. They open up immense possibilities of all kinds for unique and interesting applications.

Of course, every plug-in has its problems also. It's another piece of software that has to be downloaded and installed. It's another piece of software sucking up hard drive space. It's another piece of software that as soon as you get the latest version and install it, another version comes out that you have to install.

But these applications seem to work, offer excellent multimedia-enriched Web browsing and many other applications that can help to personalize both the Internet and Intranets that are becoming the norm at home and at the office.

This month, I take a closer look at some of the more useful Plug-ins. At the time of this writing, I counted over 75 different Plug-ins that are available. They span the spectrum from multimedia to CAD drawings and from VRML to MIDI music. The field is vast and the choices are confusing, but you can be sure that if there is something specific you need for your own site or for your viewing pleasure, it is or will soon be available.

Unfortunately, in order to cover all the plug-ins in any useful detail, I would have to write an entire book – and who needs another book about the Internet? Besides, it would be out of date even before I typed the last period.

Let's take a look at some of the caffeine-free (and monetarily free) alternatives to making the Web more useful and enjoyable.

WHERE TO FIND PLUG-INS

I suppose that the best place to start with plug-ins is where you can find them. These programs are available almost everywhere, but a few of my special hang-outs excel in collecting and categorizing them for quick retrieval. I'm also presenting you with these useful addresses because as much as I wish I could describe

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everything cool and useful, my page limit is usually stretched to the brink by the time I'm done with my usual assortment!

Stroud's CWSApps List

http://www.stroud.com/plugin.html (Win 3.x)
http://www.stroud.com/95plugin.html (Win95/NT)

For some reason, I always have to plug Forrest's site. Could it be because he's usually right next to my column in the magazine? Nah, it's because if you want and need Internet software, he has it all nicely categorized for easy locating and downloading.

Slaughterhouse Software

http://www.magpage.com/~cwagner/plugins.html

Another mainstay for my software collecting nature. All plug-ins are categorized by type (VRML, Multimedia, Graphics, etc.) and this site is updated at least twice daily. This was also only one of two software sites that had virtually every plug-in that's been released. A must-have bookmark if you don't mind littering your hard drive with new programs.

Netscape - Plug-Ins

http://home.netscape.com/comprod/products/
navigator/version_2.0/plugins/index.html

I don't know why, but it took me a long time to realize that this page is accessible from the Help pull down menu in the browser. Not only are many of the best plug-ins categorized by type, but there is an excellent collection of the information necessary to design and program your own specialized plug-in. This site is another must have bookmark if you're going to plunge into plug-ins.

Tucows

http://home.texoma.com/mirror/tucows/plug.html
(Win 3.x)
http://home.texoma.com/mirror/tucows/plug95.html
(Win95/NT)

They may have the worst of names for their site, but they have a wonderful collection of virtually everything including a CD-ROM full of software that you can order. Their plug-in section is pretty good too!

BrowserWatch Today!

http://www.browserwatch.com/plug-in.html

This site was an accidental find that turned out to be a keeper. Besides having one of the most complete listings of plug-ins available, there are tons of information, gossip, stats and "how-to's" available to make your life more complete and to make you the most informed kids on the block. Although not organized as well as some of the other sites listed above, it is extremely current.

Useful Plug-Ins

These are at least the basic plug-ins every Web surfer should have, and some of the more entertaining and useful ones. Take the time and effort to get them, and be prepared to be "shocked" (hint, hint) by what you will experience.

SHOCKWAVE FOR DIRECTOR
http://www.macromedia.com
/Tools/Shockwave/

If you could only have a single plug-in installed on your system, one that would delight you and show you what true interactive multimedia content is all about, this is the one. As I stated several months ago, this program is one of the most striking examples of the possibilities of the Web.

Shockwave for Director was first released in December, 1995. Since then, its developer Macromedia claim that over a million copies have been downloaded. Also, *Shockwave for Freehand* and *Authorware* have been released, giving a half million professionals throughout the industry who currently use these products, the ability to provide unique and interactive content for the Web both on the Internet and Intranets.

Shockwave is really made up of two pieces. The actual Shockwave plug-in is what those who will be viewing Director presentations on the Web need to download. Developers who want to put their Director creations on the Web will need to download *Afterburner*. This is a utility program that compresses and optimizes Director presentations for delivery over the Web. You also need to persuade your webmaster or ISP to add the proper MIME type to his/her Web Server configuration. Fortunately, there has been enough press and interest in this format that it might already be set up. If not, a little groveling to your ISP never hurt anyone.

Now that I have hyped this plug-in, let's talk about the Shockwave home page. From this page, download the correct package for your operating system. The plug-in is currently available for the Mac, Win95/NT and Win3.x. Installation is as simple as running the program and letting the installation Wizard lead you through it. At this point, you need to see why I think this stuff is so cool.

Click on the *Shockwave Epicenter Gallery* and you'll have immediate access to hundreds of sites utilizing this technology. Be sure to take a look at all of the corporate sites as these are some of the most impressive of all ("Toy Story" is the best). Also be sure to look through the Shocked sites of the day. These are done by amateur users of Director but the imagination and creativity are still amazing. Other information that is available covers installation and tech notes, developer information for users of Macromedia products for both the Web and stand-alone presentations, tips, tricks, press releases and much more.

The number one Babbman recommendation for plug-ins.

CRESCENDO
http://www.liveupdate.com/crescendo.html

Whether you're sitting at home, reading a book, driving in your car, working or waiting in phone jail, inevitably there is

music playing in the background. So, why shouldn't you have music playing in the background while you're browsing the Web? Now you can.

Crescendo is a plug-in that plays MIDI music in real-time as you're browsing a web site. The program is currently free for personal use or just a small fee for corporate use. For those who are unfamiliar with MIDI, it stands for Musical Instrument Digital Interface and is the standard throughout the music industry today in recording and playback of digital music. MIDI files are extremely small and pack a powerful audio punch.

MIDI music can be played through the standard Sound Blaster card through its built in FM Synthesizer or through many of the add-on daughterboards that affordably bring Wave Table Synthesis to your computer. Many newer sound cards feature Wave Table Synthesis as a standard feature. If you're wondering what Wave Table Synthesis is, it basically means that you have the sound source for a high quality keyboard synthesizer right in your computer. If you haven't experienced music in this way before, you don't know what you're missing. I've used several of the add-on cards for my Soundblaster 16 and they are totally worth the price (**$90** and up). I've used the Ensoniq Soundscape, the Wave Blaster II and most recently, the Roland Sound Canvas — which in my opinion, is the most awesome sound card I've heard.

Installation of Crescendo, while not automatic, is relatively simple. Just expand the program and copy a 100K DLL file to the plug-in directory listed under your Netscape 2.0 (or later) directory. From there, it's as simple as finding a site that has a .MID file embedded in the page.

As for adding a .MID file to your own page, it's just a little more complicated. Fortunately, this site offers complete instructions for two different schemes. The easiest way is to persuade your ISP to add the proper MIME extension to their Web Server configuration. If you get too much grief or no response from them at all, instructions are also included that explain how to utilize a publicly accessible FTP site to add .MID files to your page.

I highly recommend that anyone who enjoys music, look into some of the add-on Wave Table cards that are currently available. Once you hear one, you'll wonder how you got along without it. Now, I'd say that you need an example of a Web site that is utilizing Crescendo. Try this shameless plug:

THE MIDIZONE
http://www.aquila.com/chris.plasch/

Chock full of some of the best MIDI music available on the Web today. Plus, Chris Plasch is one of my best friends and one of the most talented musicians I know. If you like his stuff, bombard him with e-mail that yells at him to do more!

ADOBE ACROBAT AMBER
http://www.adobe.com /Ambe

Acrobat PDF (Por-table Document For-mat) files have become a very popular format for distributing published material both in a standalone format and over the Web. I was surprised to find that much of the documentation for some of the specialized programming software I use at work was published in the PDF for-

mat. I have also been providing my own newsletter called *Aquila .netbits* (another shameless plug) in PDF format for the last several months.

Adobe claims that Acrobat is the fastest and easiest way to publish on the World Wide Web or on the Corporate Intranet. I'll agree with that but I also have to say that if you need the ability to distribute information across multiple platforms in something other than the standard text format, it hits that mark too. If you haven't had the opportunity to publish information in a PDF format, let me describe the process.

You install the .PDF printer driver on your system. You create your publication in whatever you normally use (I use Word, MS Publisher and Pagemaker), including font styles and sizes, graphics... you get the picture. Then you simply print the publication to the PDF printer driver. At this point, you have a completely portable document to put on the Web or distribute in any way you see fit. In order to see the benefit of publishing this way, I'll describe what I've been doing.

Aquila .netbits is designed to be sent through the mail to all Aquila Internet subscribers. I lay out the publication and print it out using a high quality laser printer. This copy is then sent off to the printers. In order to make this same publication available over the Web, I simply re-print the exact same document using the PDF print driver. The work is done one time with two different formats to show for it. It couldn't be any easier.

Once you have obtained the Acrobat Amber program, installation is simple and straightforward; just follow the installation Wizard. Some of the publications available for viewing are available from this site and are well worth checking out. *The New York Times*, *PCWeek* (looks just like the magazine), tons of Adobe information (of course) and countless newsletters are linked and very readable.

Also available from this site is information on new features, known problems, FAQ's and everything you need to know about creating your own PDF documents and development information with Amber API's. Again, if you're interested in adding PDF files to your own Web site, you'll need to give your ISP a call to get him to add the proper MIME type to the Web Server.

This one is destined to become one of the standard utilities necessary to use and enjoy the Web to its fullest.
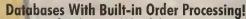

PREVU BY INTERVU
http://www.intervu.com/prevu.html

The most aggravating part of getting video over the Internet is waiting for the entire file to finish downloading to your machine before viewing it. So, if you knew a secret to avoiding this problem and maybe see the video while it is downloading, would you be interested? How about being able to place your own video within a page, much the same way that you can just drop in a .JPG or .GIF file? I thought so.

PreVU by Interview is a plug-in that allows you to watch MPEG videos over the Internet as they are downloading to your machine. You have the ability to stop the playback while it is streaming in and because the plug-in uses the Netscape cache, you can replay the video as often as you wish with no delays.

Installation is extremely easy. Just expand the program and run setup. From there, just follow the Wizards lead and in no time, you will be wisked off to a PreVU help page where you can learn more about the program, find out how to add Mpeg Video to your Web site and see if everything was installed correctly by viewing a sample video.

The InterVU web site is chock full of information. If you're interested in developing MPEG applications, there are FAQs, tips for content providers and other information necessary to make your presentations as bandwidth friendly as possible. Also available are pages to demonstrate all of the capabilities of PreVU, links to sites with MPEG video and previews of PreVU features to come in the next few months. Of the more useful links available, complete information is made available that allows you to place your own video on your home page, specifying the height, width, framerate and several other parameters.

This is another plug-in that can be described as a utility class of program and is highly recommended to help make your wait for video seem just a little shorter. Of course, if your Internet connection is exceptionally slow or spotty on occasion, you will just want to wait for the entire file to download anyway. No plug-in in the world can help with that problem!

REALAUDIO
http://www.realaudio.com

Realaudio has been part of my collection of Internet goodies since I first started browsing the Web. I've listened to some great information, entertaining radio broadcasts and many other audio broadcasts with this most useful program. I was delighted when it was made available as a plug-in for Netscape.

After installation, your browser is automatically launched to the Real Audio Home Page to help you discover the capabilities of this awesome program. From this site are links to many of the sites using Real Audio. ABC News, PBS and National Public Radio are just a few of those available.

Also available from this page is the complete line of Real Audio products; this program, the Real Audio Server, used for serving up Real Audio Streams from your Web Server; the Real Audio Encoder, used to prepare your audio content and the Real Audio Personal Server. With the exception of the client software, all the rest are available for evaluation and for purchase. Other offerings include the Real Audio Showcase which helps to show the countless ways that Realaudio can be configured and used on your own site along with samples of these various configurations.

Without question, Real Audio should be a part of everyone's arsenal of Internet utilities.

NUTSITE© OF THE MONTH

Living in northern Illinois for my entire life, I've been exposed to many things. Of all of them (besides random gang shootings), tornadoes are the most terrifying and exhilarating threat that I've had to live with. I can remember, as a child, the storms that resulted in the dreaded tornado warning sirens that to this day, send terrifying shivers down my spine and bring a weakness to my knees. In 1990, I remember being at work and seeing an unbelievably dark and foreboding cloud hovering just to my south. Only minutes later did I hear the chilling news reports of the Plainfield tornado that virtually leveled the town and killed so many people. I had the opportunity to visit the site only a few hours later and found the destruction to be total, terrifying and indelibly etched into my mind. Of course, when the movie "Twister" came out I had to see it and from that awesome flick came the subject for this months NutSite©.

Storm Chasers lead a very cool existence. I wish I could do it but some of us have to work for a living at jobs that are just a little less dangerous. My hat goes off to these nuts who purposely put themselves in harm's way to help understand this powerful and unpredictable force of nature and to help find a way to warn us of impending disaster in the future. Oh well, I'll just have to live my dreams through this site...

STORM CHASER HOMEPAGE
http://taiga.geog.niu.edu/chaser/chaser2.html

If you're interested in storms or just want to know what the latest weather satellite photos have to say about your neck of the woods, this site provides it and more.

This site is at Northern Illinois University and is maintained by Gilbert Sebenste, a professional meteorologist and a storm chaser. It features a fabulous amount of interesting information on the art of storm chasing, the latest breaking news for chasers, weather links, a huge collection of up-to-date satellite and radar images, weather links and archives, photo galleries, FAQ's and more.

As for storm chasers themselves, thank you for your efforts and for putting your life in danger. If you didn't, we wouldn't have some of the great video footage and necessary information that helps the National Weather Service warn and protect us from the unpredictable skies.

Past columns, sadistic rantings and sarcastic prose are constantly rearing their ugly head at:

http://www.aquila.com/babbs.bookmarks/

Comments, anything weird, nutty, cool and especially unbelievable sites or anything Java that is actually worth taking the time to load my browser up for should be launched to:

cbabb@aquila.com

Happy Independence Day!◆

CONSUMMATE WINSOCK APPS
by Forrest Stroud

The applications reviewed here and many more are available on Stroud's Consummate Winsock Apps List, http://www.stroud.com and http://www.cws apps.com

Forrest H. Stroud is a senior at The University of Texas at Austin. He is currently pursuing a degree and career in Information Systems and Data Communications Management. Stroud can be reached at neuroses@mail.utexas.edu

What's this Internet thing all about really? Everyone knows it's more than just surfing the web, e-mailing your friends, and online chatting, but many people don't realize just how much more the Net has to offer. Quite simply, there is something for anything and everything on the Net. Perhaps best of all, that something can most often be acquired for nothing at all. While a few sites charge for their information, the majority of information remains free for the taking. How long that will continue is a question on the minds of many. My guess is that as soon as efficient and inexpensive cost tracking mechanisms are released en mass, the Net as a free-for-all will be no longer. So while the information is still available for the taking, you might be interested in knowing just what the greatest "information steals" on the Net are. Here are my picks:

Yahoo! — **http://www.yahoo.com**

Yahoo! is by no means the most complete search engine on the Net, but it is by far the easiest to use, and judging by user response, it's the most fun to use as well.

The Raleigh News and Observer (NandO.net) — **http://www.nando.net**

By far the best online newspaper. Tons of free information and daily news for only **$12** a year — it might not be free, but it is one of the best deals on the Net.

The Security APL Quote Server — **http://www.secapl.com/cgi-bin/qs**
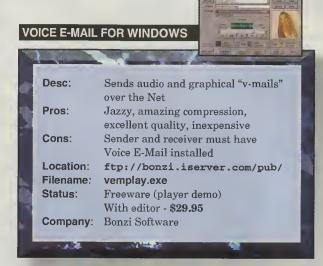
Your source for free stock quotes (with a 15-minute delay). This site is the easiest and most efficient way to track your investments on the Net. Online trading can be conducted as well.

The Internet Movie Database (TIMD) — **http://www.msstate.edu/Movies/**

This site is awesome with a capital "A." More than 50,000 films have been categorized, reviewed, and rated by TIMD. The site also includes extensive searching capabilities by film, actor/actress, writer, and director.

ESPNet SportZone — **http://ESPNET.SportsZone.com**

All the sports information you could ever want and more. A subscription plan is available but almost all relevant information is still available for free. This site nets an A+++ in my book.

VOICE E-MAIL FOR WINDOWS

Desc:	Sends audio and graphical "v-mails" over the Net
Pros:	Jazzy, amazing compression, excellent quality, inexpensive
Cons:	Sender and receiver must have Voice E-Mail installed
Location:	ftp://bonzi.iserver.com/pub/
Filename:	vemplay.exe
Status:	Freeware (player demo) With editor - $29.95
Company:	Bonzi Software

Bonzi's Voice E-Mail for Windows is an add-on multimedia mail utility designed to give users the ability to send audio and graphical messages across the Net. Voice E-Mail plug-ins are available for PC Eudora and Netscape Navigator, Compuserve and AOL, and Microsoft Mail. Each plug-in includes standard mail features like multiple recipient capabilities, message queuing, an address book, priority control, sensitivity filtering, and more. Bonzi offers a free Voice E-Mail player that will give you an idea of the client's capabilities, but it lacks the ability to create, compress, and send multimedia messages.

For $29.95 you can get the complete client and use all of Voice E-Mail's innovative features. First, sound effects and voice clips can be edited and spliced together in a dynamic message. You can also add static pictures and, of course, text. Voice E-Mail then uses its advanced compression technology to reduce the overall file size by nearly 90%. Bonzi accomplishes these amazing compression rates by using two compression schemes, one designed specifically for the static part of your v-mail and another that addresses the dynamic portion. The quality of both aspects of the v-mail are extremely high, especially the audio portion. Voice E-Mail utilizes Microsoft's Sound Recorder to play sound clips, adding echo and reverb effects, volume and speed control, and mixing capabilities to the Voice E-Mail feature set.

By delivering cutting-edge technology to one of the Internet's oldest services, Voice E-Mail has the capacity to both innovate and stimulate. Only the addition of high-quality video could make for a more personal e-mail experience. The only real downside is that both the sender and receiver must have Voice E-Mail installed on their systems. Bonzi needs to secure bundling agreements with vendors of popular mail programs.

One of These Web Pages Can Get You FIRED!

| Location: http://www.corps-web.com | Location: http://www.corp-web.com |

CORPORATE WEB

The Best in Medical, Consumer & Financial Products!

Place Order   Review Our Services   Price Quotes   Input Your Info

CORPORATE WEB

The Best in Medical, Consumer & Financial Products!

Place Order   Review Our Services   Price Quotes   Input Your Info

One of these pages is a complete FRAUD. Can you tell which one?

Your Web identity has just been stolen!!!
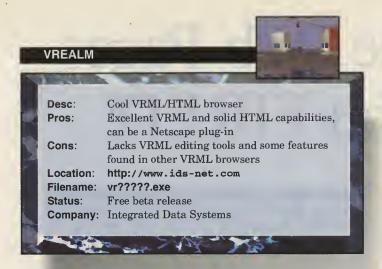
In less than 30 seconds thieves can download your entire web site. They can change any piece of information, fraudulently collect information from your unsuspecting customers and generally wreak havoc with your organization's identity. Then they repost an "almost" identical site with a similar domain name. Search engines will find the bogus site right along with your legitimate site, and users can't tell the difference.

To protect your Web site (and your career) you need TrueSite^sm. The TrueSite^sm Web Certification System protects the Web identity of professional organizations and gives users confidence to rely on the information contained on the site. Once your site is "TrueSite^sm Certified" you are licensed to display the TrueSite logo on your home page. Users who click on the logo instantly receive a validation message that the site is authentic. Bogus sites will not verify. Visit our home page to learn more about the complete TrueSite^sm System which makes the Web a safer place for you and your customers to do business.

If you don't see this ➡ ✓ can you trust the rest?

TrueSite^sm CERTIFIED

VREALM

Desc:	Cool VRML/HTML browser
Pros:	Excellent VRML and solid HTML capabilities, can be a Netscape plug-in
Cons:	Lacks VRML editing tools and some features found in other VRML browsers
Location:	http://www.ids-net.com
Filename:	vr?????.exe
Status:	Free beta release
Company:	Integrated Data Systems

V-Realm is a new VRML/HTML combination browser for Windows. In addition to extensive Virtual Reality Modeling Language (VRML) capabilities, V-Realm also offers adequate HTML support. V-Realm is also available as a plug-in for Netscape 2.0, which is likely to be the preferred configuration. Features include full VRML compliance, the ability to read Open Inventor and all VRML files, support for collision detection and texture files, a gravity option, various viewing modes (fly by, walk through, and point to), HTML hotspots, navigational bookmarks (Viewpoints), location indexes, texture filtering, and a lot more. Features currently lacking include VRML editing capabilities, animation, sound and video, and 3-D IRC chatting with avatars. All in all, V-Realm is one of the best apps available for viewing both the 2D HTML worlds and the 3D VRML worlds of the Internet.

PIRCH

Desc:	IRC client with an intuitive and graphically appealing interface
Pros:	Attractive, easy to use; integrated media player, finger client, and DNS lookup app; bio feature
Cons:	Could be faster, more polished, lacks filtering
Location:	http://www.bcpl.lib.md.us/~frappa/
Filename:	pirch.zip
Status:	Shareware - $10
Company:	Northwest Computer Services

PIRCH offers one of the most attractive, easy to use interfaces for an Internet Relay Chat client on the Net today. It combines ease of use with powerful features, intuitive design, and context-sensitive online help. PIRCH supports private text-based chatting, as well as the ability to send and receive text, video, sound effects, MIDI, and synthesized speech files. PIRCH offers an integrated multimedia player for playing files received via IRC. Additional features include concurrent multiple server connections; user definable aliases, variables, and events handling; support for CTCP (Client to Client Protocols) and DCC (Direct Client to Client); flood handling; a personal biography feature; an integrated finger client and a DNS lookup app; direct integration with Netscape Navigator or the web browser of your choice; and

more. PIRCH also includes a beginner's guide to IRC and extensive documentation.

PIRCH lacks several advanced features. It is relatively slow in listing channels for servers and also lacks the ability to filter channels. The integrated web support could be handled better by offering users direct double click access to a web, FTP, or related site. PIRCH is also only available as a 16-bit release, but a 32-bit version is expected in the future. Overall, the intuitive and graphically appealing interface of PIRCH is likely to attract many new users, and with continual development, PIRCH may well become the app of choice for novice and expert IRC users alike.

PERSONAL STOCK MONITOR

Desc:	Free time-delayed stock quotes
Pros:	Easy and efficient
Cons:	32-bit only client, lacks features found in the competition
Location:	http://www.telogy.com/~aivasyuk/
Filename:	psm??.zip
Status:	Shareware - $20
Company:	Anatoly Ivasyuk

Personal Stock Monitor simplifies the routine and often quite time-consuming chore of tracking stocks. It offers several features lacking in the competition, but also lacks many that are standard fare in other ticker clients. Users can choose from five different free stock servers (PC Quote, Security APL, CNN Financial Network, StockCenter, and DBC Online), configure update intervals, run multiple concurrent connections, use PSM with proxy servers, set price alerts, print reports, and more. Information on each stock includes daily and yearly high/low prices, current price, daily percentage change, volume traded, and the time the stock was last updated. Like all other stock ticker clients on the Net, the stock information posted by Personal Stock Monitor is delayed by at least fifteen minutes. Missing features include searching of any kind, mutual fund monitoring, ticker scrolling, integration with the Windows 95 task bar, portfolio management capabilities, bond and international investments tracking. Personal Stock Monitor is only available as a 32-bit client, but it will run on Windows 3.x platforms with the latest version of Win32s. Overall, Personal Stock Monitor offers quite a selection of features for only $25, but the competition offers even more and often does so at a cheaper price.◆

PUBLISHING ON THE WEB by Michael Erwin

ANIMATED GIF IMAGES

Michael lives in Huntington, West Virginia, with his wife Jacqueline and Paxi Baby. (Jackie's Shar-Pei dog.) He has designed, built and administered network systems for over 16 years. Mike has organized and documented his 600-megabyte bag of tricks, tools and voodoo on a CD-ROM entitled, *"The WebMaster's Resource."* It is available for US$24.95, plus US$2.00 shipping in the United States or US$5.00 else-where; send check or money order to 320 36th Street, Huntington WV 25702-1632. Please allow 4-6 weeks for delivery. For more information mailto: mikee @eve.net

This month I am going to introduce you to something new and way cool. Well, actually it's almost 8 years old, but it is still way cool! In April, 1995, we covered how to do transparent GIF images, with the GIF89a image format. This month I am going to show you one of the best kept secrets of GIF89a images.

A while back someone asked me how to create an animated GIF image. "A what?" I asked them. I knew about server pushes, client pulls and Java, Java scripts. I have even worked on Macromedia's Shockwave files, but animated GIFs? I missed something. So I went on a little expedition. I was in search of the elusive Animated GIF.

Well, they do exist, at least in Netscape Navigator and Microsoft Internet Explorer browsers. Animated GIFs are not HTML extensions; however-er, the web browser does have to support the animation feature of GIF89a.

GIF files are normally made up of two parts, or blocks. The first block is the *header* of the file. This header block tells the viewer application the dimensions of the image and sometimes the global color palette.

The second part or block in a normal GIF is the *image* block. This is the block that makes up the displayed image. This is also the block we modify when creating an interlaced GIF. Simple, right? But there's much more.

According to the official GIF89a specification, there is a bunch of other "optional" parts or blocks to GIF89a. For example, there are blocks that can contain comments which are not displayed in the image. There are even application blocks and plain text blocks in the GIF89a format specification.

One of those optional blocks is a *control* block. When we create a transparent GIF, we are actually creating a control block. This control block contains the indexed color number that will be made transparent.

It's these various parts or blocks of a GIF file that give us the ability to do Animated GIFs. So let's get started.

First off, go to Alchemy Mindworks web site at `http://www.mindworkshop.com/alchemy/gww.html` and retrieve a shareware software package called *GIF Construction Set for Windows*. This is simply a great piece of shareware, as you will see as we go on.

Take a look at Figure 1. I want to make that little train engine to go puffing across the screen. Here comes the tedious part. I am going to cut and paste that train to the front of the track, then save it as **TRAIN1.GIF**. Then I will move the train a little, by cutting and pasting, and save the new image as **TRAIN2.GIF**.

Figure 1: Let's Get This Train Moving!

I need to continue this cut and pasting routine until I have the train all the way to the other side of the screen, as shown in Figure 2, which is saved as **TRAIN25.GIF**.
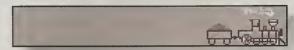

Figure 2: 25 Cuts and Pastes Later...

So now I have 25 GIF files, with the train at different steps along the track. If I really wanted to get creative I could have adjusted the smoke billowing from the stack to make it even more impressive. Now what are we going to do with them?
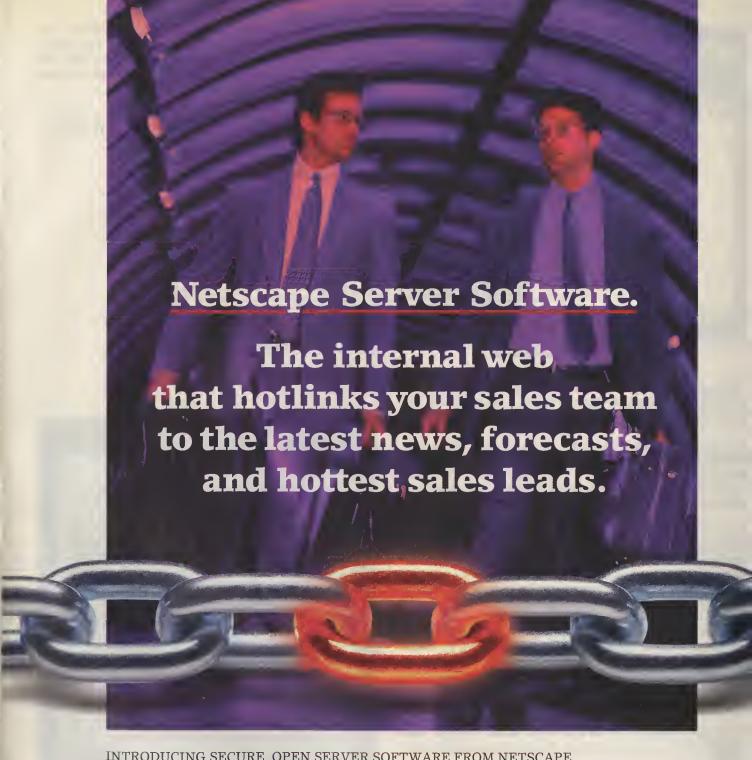
When I was a lad, we could buy comic books that had an image in the upper right hand corner of each page, each slightly different from its predecessor. When you flipped through the pages, the image would appear to move around on the page. That was before the days of Nintendo. However, it's the same "flip frames" technique that gives life to cartoons, whether hand drawn or computer generated.

We are going to use this technique in our animated GIFs. At this point you need to launch GIF Construction Set, or GIFCON for short.

First, I open and load **TRAIN1.GIF**. GIFCON shows the individual blocks stored in the GIF image; see Figure 3. If you highlight a block, you can use the buttons or menus to manipulate and change the values associated with the blocks.

At this point I start to insert the other GIF files into this GIF. When you click on **INSERT**, a dialog box

Netscape Server Software.

The internal web that hotlinks your sales team to the latest news, forecasts, and hottest sales leads.

INTRODUCING SECURE, OPEN SERVER SOFTWARE FROM NETSCAPE. Now, within your organization, you can create an intranet for publishing information online. And, with hyperlink technology, your people can connect to information with a simple point and click.

HOTLINK TO A FREE 60 DAY SERVER TRIAL Netscape software includes encryption technology to protect your work. Also, Netscape Servers are based on open industry standards and are available on Windows NT and Unix platforms from Compaq, Digital, Hewlett-Packard, Informix, IBM, NCR, NEC, SCO, Siemens Nixdorf, Silicon Graphics, and Sun. So, if you want your people totally connected, don't just wire their computers: Hotlink their information.

N

NETSCAPE

Call us at 1-800-254-5795. Or see us at http://info.netscape.com/nwd1
©1996 Netscape Communications Corporation. Other tradenames referenced are the property of their respective owners.

Figure 3: *GIF Information blocks*

As you gain some experience with GIFCON, you will find you can do some amazing things. For example, you can have a complete slide show type of presentation in one GIF file. Alchemy Mindworks includes a wonderful example of doing simple slide show in a file called **EXAMPLE.GIF**.
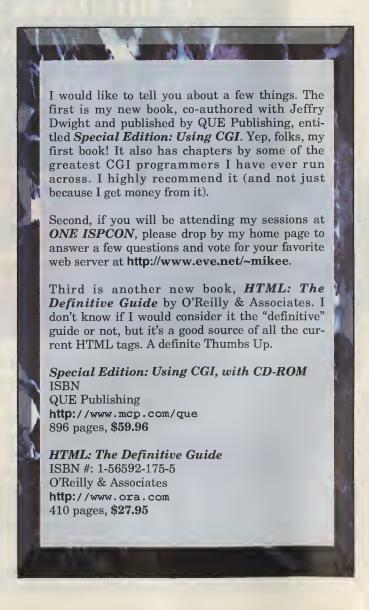
If you need to keep the animation running, like a spinning world, then simply insert a **LOOP** block in the GIF file after the header block.

Go forth and liven up your web pages!

Till next month..

```
mikee@eve.net
```

GIF Construction Set
Alchemy Mindworks Inc.
P.O. Box 500
Beeton, Ontario
CANADA
L0G 1A0
http://www.mindworkshop.com

will appear, from which you can insert several different types of blocks into your GIF. But for now, all we need to worry about is the **IMAGE** option.

Continue to insert the rest of the 25 GIF files into **TRAIN1.GIF**. At this point if you view your GIF file, it should appear to move. However, it will probably look terrible, so I need to do some adjusting to speed things up and adjust how the image is drawn and erased.

First, I need to change the **CONTROL** block of the GIF. Highlight the control block by clicking on it and then click on the **EDIT** button. The EDIT dialog box appears. I personally find that the animation looks better by changing the value for **Remove by** from **Nothing** to **Leave as is**, and set the **Delay** to **10/1000** of a second.

At this point you need to either **INSERT** or **COPY/PASTE** additional control blocks between each of the image blocks for control throughout the animation. Once I have inserted control blocks between each image, I will need to adjust the **DELAY** settings in each control block in the GIF to get the desired smoothness to the animation.

Save the complete GIF as a new file name. I called mine **ATRAIN.GIF**, for Animated Train. To use these images in your HTML documents, just use a simple tag like:

<IMG="ATRAIN.GIF" ALIGN=MIDDLE>

Pretty simple right? But there are some gotchas to watch out for.

First, make sure that all of the images are of the same size.

Also remember that not every one will use a GIF-89a compatible browser. So if you want to animate a button, make sure the first image in your GIF is displayed coherently. For example, if you are going to have the lettering on a button fade in and out, make sure the first image in the GIF is at full intensity.

I would like to tell you about a few things. The first is my new book, co-authored with Jeffry Dwight and published by QUE Publishing, entitled ***Special Edition: Using CGI***. Yep, folks, my first book! It also has chapters by some of the greatest CGI programmers I have ever run across. I highly recommend it (and not just because I get money from it).

Second, if you will be attending my sessions at ***ONE ISPCON***, please drop by my home page to answer a few questions and vote for your favorite web server at **http://www.eve.net/~mikee**.

Third is another new book, ***HTML: The Definitive Guide*** by O'Reilly & Associates. I don't know if I would consider it the "definitive" guide or not, but it's a good source of all the current HTML tags. A definite Thumbs Up.

Special Edition: Using CGI, with CD-ROM
ISBN
QUE Publishing
http://www.mcp.com/que
896 pages, **$59.96**

HTML: The Definitive Guide
ISBN #: 1-56592-175-5
O'Reilly & Associates
http://www.ora.com
410 pages, **$27.95**

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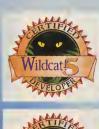
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WEB SERVERS DISSECTED by Michael Erwin

FRONTIER TECHNOLOGIES' SUPERWEB SERVER 1.1

Michael lives in Huntington, West Virginia, with his wife Jacqueline and Paxi Baby. (Jackie's Shar-Pei dog.) He has designed, built and administered network systems for over 16 years. Mike has organized and documented his 600-megabyte bag of tricks, tools and voodoo on a CD-ROM entitled, "*The WebMaster's Resource*." It is available for US**$24.95**, plus US**$2.00** shipping in the United States or US**$5.00** elsewhere; send check or money order to 320 36th Street, Huntington WV 25702-1632. Please allow 4-6 weeks for delivery. For more information mailto: `mikee @eve.net`

"With a name like Smuckers' it has to be good." When I received the Frontier Technologies Corporation's web server software for this month's dissection, I thought about that jelly slogan. The box has the weirdest looking "spider" you have ever seen. But let's see if Frontier Technologies Corp.'s *SuperWeb Server 1.1* is any good.

SuperWeb comes with a 307-page manual, not counting 68 pages of updates. The manual is complete and concise. Early sections like "What is the Web" and "What is a URL" seem a bit elementary. But SuperWeb's market focus is on corporations joining the Web for the first time.

INSTALLATION

SuperWeb Server comes on a CD-ROM. But if you don't have a CD-ROM drive, that's OK, the CD-ROM includes the images for the diskettes on the CD-ROM. Hummmm, let me see... if you don't have a

PLATFORM USED FOR REVIEWS:

Intel Pentium 66mhz CPU
24mb of RAM
Windows NT Server 3.51 Build 1057
2gb SCSI HD
S3 PCI Video Controller, Running 640x480x16
3Com 3C509c ISA Combo Ethernet Card
Toshiba 3401b External CD-ROM drive

CD-ROM drive you can create the diskettes from the CD-ROM? I guess that's one of the mysteries of computer life.

The installation of the software was very easy. But the installation program does ask a weird question: do you want to install the client, the server or both? After going through the manual, I realize that the server comes with a server administration/manager client tool. That seems cool, so I choose "Both."

Then the "Setup Wizard" starts. I accepted the default server name and set the Service Start Option to Automatic Startup. So the software runs as a service of NT; that's good. I click on "Next," then "Congratulations! You have entered all necessary data for setup." That couldn't be all there is!

After rebooting the system, I had a program group on the desktop called "SuperWeb." See Figure 1. This is when I realize that SuperWeb Server comes with a slew of tools. After reading the manual again, I learned that *WebDesigner* is a GUI WYSIWYG web page editor. *HyperCheck* is an HTML URL verifier and *ImageMaster* is an image map editor.

It is especially nice for those of you putting up your first web server to have all the useful tools in one package.

Figure 1:
SuperWeb Server Includes a Suite of Design and Management Tools

CONFIGURATION & ADMINISTRATION

At this point, SuperWeb Server is installed and running. That was absolutely the least painful server installation I every did.

Next I clicked on the "WebMaster" icon in the "SuperWeb" program group. I could have assigned a password to WebMaster access, but I didn't for this review.

Unlike Netscape and WebSite, you do not use a web browser for administration. You manage SuperWeb Server from the WebMaster administration application. See Figure 2. With this utility you can change everything about SuperWeb Server.
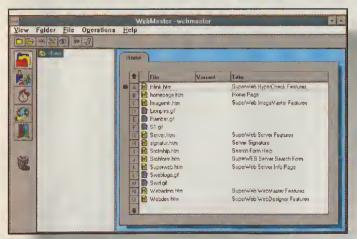

Figure 2:
Administration is Performed in WebMaster

Figure 3:
WebDesigner is a WYSIWYG HTML Editor

For example if you click on the "Configuration" icon on the left side button bar, you are presented with the servers configuration folders. From here you can change all of the SuperWeb Server's configuration settings.

As any web master knows, another one of the problems with administering any web site is managing the HTML documents on the server. However, SuperWeb Server's "WebMaster" utility contains a graphical web document display. That display shows the entire contents of your web server. Every thing in that page is an object in a neat alphabetical listing. Since everything is an object, you can drag any HTML document or image file to the trash can when you want to delete it. You can double click on a document or image, and the WebMaster utility fires off Frontier Technologies *WebDesigner* utility.

Take a look at WebDesigner, in Figure 3. Doesn't it look like a web browser? It is actually a GUI WYSIWYG web page editor. Back in the May issue of "Publishing on the Web," I reviewed some HTML editors and decided to stick with a plain text editor. Well I have to tell you, WebDesigner is the best HTML editor I have ever used. I mean this is a *great* HTML editor. It is true WYSIWYG. It even supports backgrounds, forms, tables, text colors, frames and even floating images.

Another item that Frontier Technologies gives you is *HyperCheck*. HyperCheck can check every URL in your HTML document directory tree. If the URLs are OK, you will get a green check mark beside each document. To the left side of the HyperCheck windows you see the directories and the HTML documents. If you click on an HTML document, i. e., "Markhome.htm," HyperCheck shows the URLs used in that HTML page and whether those URLs are valid.

If an HTML document has a bad URL, you will see a red X beside the document name. If HyperCheck can't tell if a URL is good or bad, for example in a "mailto:" HREF tag, you will see a yellow question mark.

REMOTE ADMINISTRATION

Here is the coolest feature of SuperWeb Server. Did you notice back in Figure 1 the icons with "Remote" in the title? Well if you click on any of the "Remote" utilities, it will ask what SuperWeb Server you want to work on. It will also ask you for a user id and password for the server. Now all of the other servers allows the web master to work on the server configuration via a browser, but SuperWeb Server also allows the web master to define users, groups and rights for each server. You can control, from a remote location, who can modify, create or delete, specific HTML documents on your web server.

This is a GREAT feature, especially in corporate web sites. This is a feature you just have to work with to appreciate. You could have the equivalent of co-sysops or forum managers without giving away the farm. I applaud the team at Frontier Technologies for this wonderful feature.

As the site grows, you will eventually want to add some type of search capability. Included with the SuperWeb Server is a search CGI script, so that visitors to your site can search your HTML documents and files.

CGI AND SSI

SuperWeb, like most commercial web servers, supports CGI specification v1.1, Windows CGI v1.1, and server APIs. But it also supports Microsoft's ISAPI. So you can use those existing VB CGI scripts and the newer ISAPI scripts.

However, Server Side Includes (SSI) are mysteriously missing. SSI is not even in the manual. They dropped the ball here. Now that I have said that, how many of you actually use SSI?

ISSUES AND PRICING

SuperWeb currently does not support secure transactions via SSL or S-HTTP. But Frontier Technology has

announced that support will be available for it.

The software sells for a suggested price of **$795.00**. I wish it was cheaper, but if you don't know that much about UNIX or even Windows NT, nothing comes close to SuperWeb for ease of use and administration.

PERFORMANCE

SuperWeb Server's resource requirements seem to be on par with Netscape Server. The documentation recommends a P90 with 32Mb of RAM for better performance. As I always say, the more RAM the better.

So if you want a flexible web server package — especially if you run a commercial or corporate site with several web administrators – SuperWeb Server is an excellent choice. Matter of fact this would be a great Intranet server. And get this, they have a support BBS! So I guess "With a software package like this, it has to be good" and it is. I will recommend it to several corporate clients.◆

AREA	RATING
PRICE	👎
INSTALLATION	👍
ADMINISTRATION	👍
USER AUTHENTICATION	👍
DOCUMENTATION	👍
CGI HANDLING	👍
PERFORMANCE	👎
AUDIENCE	Intra Nets, Corporate Sites and Complex sites that do not require Secure Transaction

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*Microsoft Internet
Explorer 3.0 Beta
Browser*

NETSCAPE vs MICROSOFT

by Jack Rickard

The battle between Netscape and Microsoft over domination of the Internet shows no sign of letup. If anything, the competition has heated to explosive levels with both companies releasing anything that looks like software or might work a little bit from their arsenals, and acquiring any companies that have software that looks like it might be important. The result is some enormously promising new design elements for the World Wide Web - and a lot of largely broken software.

Our May cover featured BillGatus of Borg and a report on Microsoft's new initiatives described in some detail at their professional developer conference in March. In Mid-may, Netscape released a new beta version of Netscape 3.0 for download from their web site (http://home.netscape.com). Beta 4 of this new version was available May 21. The initial result was an almost total netlock at the Netscape web site. Despite some 25 ftp servers and what must essentially be considered a backbone node connection on internetMCI's backbone, as best we could tell, Netscape was just not home. The company claims some 75 million hits per day at their site, a number we find simply implausible even with the multiple video/sound/graphic files now strewn across each page. But it is clearly true enough that nearly everyone on the web is downloading the new version - essentially bleeding these servers white at slightly under 7 MB for the full package. The wait for some operations could be measured in days.

Microsoft simply wasn't willing to let the matter drop. On May 28, they released a new beta version of Internet Explorer 3.0. It answers, feature for feature, virtually all the Netscape additions and then a few. The two releases shared a remarkable amount of things in common. The battle seems to center on development tools, audio/video, voice communications, and virtual reality tools.

In addition to the release of what looks like an entire new generation of browser software, the two companies continue to vie for packaging with various online services. Netscape has had the upper edge with many Internet Service Providers, from the large to the small, bundling Netscape software with their packages. But Netscape, hungry for revenues, has been charging a bit for the privilege. Most deals for Netscape 2.0 have been in the $12 to $15 per USER range. AT&T, for example, opted to include Netscape 1.2 largely due to a special $0.80 per user fee for the obsolete version. They've since paid the price in pain as of the 600,000 people requesting software, only 150,000 have signed up. And of those who do, the most common support question is about how to upgrade to Netscape 2.0.

Microsoft, on the other hand, has a pretty interesting price position on bundling Internet Explorer with packages from Internet Service Providers - no charge. And most of the small ISP's, struggling to simplify the process of helping their customers make the connection, are biting - hard. FREE is still a powerful word on the Internet.

JUNE 1-2: DESTINATIONS

Don't know where to go on the Web? Visit Netscape Destinations to find exciting sites in Technology News, Finance, Sports, and more.

Web pages come alive with the new beta 4 version of Netscape Navigator 3.0. Key features include new security enhancements, an Internet telephone tool, and integrated audio, video, and 3D.

NETSCAPE NAVIGATOR 2.02

Download the newest release of Netscape Navigator and read about recent enhancements. Upgrade patches for Windows, Macintosh, and Unix are also available.

NETSCAPE ENTERPRISE SERVER BETA 3

Netscape 3.0 Beta Browser

THE BATTLE CONTINUES

The result is some confusion in web land. We're seeing sites "enhanced" for Internet Explorer and sites enhanced for Netscape, and increasingly, the two web browsers do things differently. Web designers can either opt for relatively plain least-common-denominator presentations without all the new features, or bet on their favorite and essentially tell everyone on the other team to kiss off. It is becoming devilishly difficult to design for both browsers.

But enthusiasm for the shower of new features is dampening complaint. The improvements from the May onslaught of releases are NOT incremental or evolutionary. Rather, they represent stunning innovation on an unprecedented scale and at an unprecedented pace. Picture moving from DOS 3.0 to Win95, without skipping any release in between, all in a six month time period. For many, the workday is devolving into one long install and update procedure. If you're one of those users who has to have the latest release of everything, you're looking at about six months of bad hair days.

We think the gain is worth the pain, and unlike most wars, in this case the civilian bystanders make out pretty well. We'll attempt to line up the major new features, but there is so much in these new releases that tricks that would normally make an entire feature story won't even make a mention in this roundup.

THE BROWSERS

Both Browsers are faster and sleeker than before. Internet Explorer particularly has a new look and is much improved with regards to speed over the 2.0 release, which was glacial.

Notable in the Microsoft Browser was that the toolbar area is now configurable just by clicking on it and resizing it - a nice trick. But we found that when we connected to a site that was busy, Internet Explorer got very very lost in space - requiring a CTL-ALT-DEL operation to END TASK to get rid of it.

Netscape's Browser also showed improvements worth the download. But it's also beta software. Some JavaScripts cause Netscape's browser to get seriously lost as well. It causes the Windows95 version of a general protection fault, closing the program and ending everything rather abruptly.

Both browsers are emerging more as containers for add-on plug-ins and controls and script interpreters. That is where most of the new features are, and so we are going to eschew a blow-by-blow description of the few new buttons and whistles in the Browsers themselves, and focus more on the add-ons that make these releases significant. The drawback here is that there is plenty to download and add-on. Configuring your browser is relatively easy. Most of the add-ons are simply downloaded and you click on them to install them. But that can be a relatively endless process. And it doesn't con-

tribute much to the concept of a user base with a common set of capabilities. Again, web design gets more complicated. You very nearly must provide links to all the add-ons needed by your site, just so anyone can see your stuff. Suffice it to say that the Browser interface has improved a bit and speed is somewhat better. Internet Explorer received the best improvement here, but it frankly needed it.

Microsoft has added a few integral things that we think hold promise. The MARQUEE tag is cute. This is commonly done with a JavaScript to scroll information across the screen. Microsoft has simplified this common element into a simple HTML with text.

The other innovation holding yet more promise we think is the FONTFACE tag. This allows you to force a font for a specific bit of text. In fact, you can force the font, the color, and the size for a specific bit of text much as you would use bold or underline. The promising thing about this is that it frees web designers to use any font, and particularly Microsoft's TrueType fonts. They also gain control of such elements as line spacing. The problematic thing about this is that not all users will HAVE that font, and indeed on other platforms such as UNIX and Macintosh, this poses a serious drawback.

Microsoft has also extended HTML to include templates. Templates basically download some rules for how text and graphics will be displayed along with the text and graphics, affording greater design flexibility. This is actually part of the HTML 3.2 draft specification. Note that version 3.0 was never released, but the 3.2 draft is working toward incorporating more elements of the original Standardized General Markup Language (SGML), invented by Dr. Charles Goldfarb. This would allow you to define a style sheet for the current document redefining how all elements are presented. It would complicate the world of HTML a bit, but vastly extend its reach in a design sense. That Microsoft has steered toward HTML 3.2 is a big boost for this concept.

Microsoft also added some oddities worth mention. They include ActiveX controls to read Microsoft Excel Spreadsheets, Microsoft Word documents, and Microsoft PowerPoint presentations. In this way, you can include such documents in your web site and users can view them even though they don't have those programs.

Both browsers seriously upgraded the use of frames and tables. You can now create tables much more flexibly with colors for individual cells. Microsoft has introduced floating and borderless frames for an interesting visual effect.

Both browsers offer improved security protocols, which seems to be a hot-button with many web developers. Microsoft has implemented their "certificate" program for software. When you download a new ActiveX control, this certificate pops up on the screen certifying that it is the advertised program by the claimed developer. Noticeably, the certificate itself looks like a certificate, something you might get with a set of Sears Craftsman socket wrenches.

DEVELOPMENT TOOLS

Netscape has improved their implementation of JavaScript and Java and announced support for SUN's Java Beans concept. But the big news from Netscape is a thing called

LiveConnect that allows you to use Java and JavaScript with the Live3D VRML language, LiveAudio, and LiveVideo. LiveConnect basically glues everything together into a more or less cohesive whole allowing you to program extensions to a web site with sound, video, etc. They've also deployed very nicely to the Macintosh platform, UNIX, Solaris, BSDI, and seem to be quite a bit out in front on taking advantage of the cross platform aspects of Java implementation.

Microsoft has of course implemented VBScript while claiming they will indeed support Java and JavaScript as well. In this release, it does run some JavaScripts and crashes in various and entertaining ways on others. In fairness, Netscape stumbles on some creative scripting as well.

VBScript is a bit interesting but we don't quite know what to make of it. It is a subset of Visual Basic of course. But we were disappointed to learn that all financial functions, and many of the date and string functions of Visual Basic were omitted. While it is understandable that Microsoft would differentiate their free VBScript from the cash cow Visual Basic, the problem is that the advantage Visual Basic offers as a language were precisely the elements omitted. The reason I would use Visual Basic for ANY project is that it handles strings and dates very well, and more importantly has an entire array of financial and mathematical functions built in for calculating future value, present value, amortizations, and other things that are a bit painful in C or C++. Without them, VBScript looks like just another way to move things around the screen, and we don't get the point. If you are simply more comfortable with BASIC than C, it will do. In the meantime, we are seeing a lot more JavaScript on the web than Java, and little in the way of VBScript as yet.

The center of Microsoft's development is of course ActiveX controls and C++ programmers will likely love it. In any event, the development tools promise to be a major battle ground between these two platforms. Netscape is out ahead with what you can do and in leading toward a true cross platform environment where you can write one program or script and have it run on a variety of machines. Microsoft appears to have more of a view of it as an extension to the Windows operating system.

AUDIO AND VIDEO

Audio and video were integrated into the web in this release flurry in ways they just never were before. Early in the development of the web, the concept of browsers supported an open architecture that would allow you to transmit new file types, and associate "helper" programs that would launch automatically to display those files. As a result, we saw a lot of "click here to hear a message" type references that would result in a lengthy download of a file. Once it was downloaded - five minutes later - you could "play" it to hear it.

There have been a lot of current attempts to spruce this up with audio and video "streams" with products such as RealAudio, VDOLive, and others. In this scenario, rather than waiting for the entire file to download, the player spawns when just enough has downloaded to "buffer" the stream and so the audio or video clip begins playing sooner - providing a more integrated feel to this.
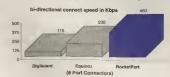
To achieve dominance, these developers have given away the players freely on the net, and then charged as much as $15,000 for associated servers to deliver the streams. The servers operated separately from the web servers and the users were handed off by reference. While the compression and streaming aspects of these technologies have indeed looked promising, the business plans have always looked like mostly wishful thinking. In this release, both Netscape and Microsoft have integrated audio and video more directly into the web page. Microsoft actually began this in their IE 2.0 release, but advance it here somewhat dramatically. Netscape has added it as well. Unfortunately, they do it a bit differently.

NETSCAPE 3.0 AUDIO/VIDEO

The Netscape release clears some of the confusion. The new 3.0 beta includes LiveAudio, and LiveVideo, two features that allow you to embed audio or video clips of an impressive assortment of formats into HTML pages very easily. They become more integral parts of a web page, and no special servers are necessary to deliver them.

LiveAudio, for example, allows you to include a sound clip in your page with a simple embed command of the form:

```
<EMBED SRC="jack2.wav" AUTOSTART=TRUE VOLUME=80
HEIGHT=75 WIDTH=225>
```

This will cause the sound clip **jack2.wav** to play automatically when someone accesses this page. It also puts a console ON the page allowing users to rewind restart and otherwise control the audio message. The message can be made to start automatically, or not, and in fact you can LOOP the message to really gain maximum annoyance factor from your pages. The console can be made to appear at different sizes or not appear at all. The command supports **.WAV**, **.AIFF**, **MIDI** and **.AU** sound files.

Similarly, LiveVideo allows you to embed audio/video interlace or **.AVI** video clips that appear as an integral design element of the page. Click on a movie image to play it and click again to stop. A right mouse click on an image pops up a complete menu of controls including Play, Pause, Rewind, Fast Forward, Frame Back, and Frame Forward.

Again, the HTML is quite simple:

```
<EMBED SRC="/flagloop.avi" LOOP=TRUE AUTOSTART= TRUE
HEIGHT=90 WIDTH=120 ALIGN=left HSPACE=10>
```

This bit would cause **flagloop.avi** to start automatically and continuously loop in a box on the page 90 pixels high and 120 pixels wide.

Further, Netscape has enhanced the ability to embed Apple QuickTime movies in web pages. Apple Quicktime has gained some sway with the ability to synchronize both sound and video in a single file. QuickTime incorporates a variety of rich media including video, sound, music, and text, and is already used in thousands of Web sites.

QuickTime is implemented through a plug-in provided by Apple Computer. The QuickTime plug-in's "fast start" feature allows you to experience QuickTime animations, music, audio, and video in a Web page while it's still downloading. The QuickTime plug-in "fast start" feature works seamlessly within firewall environments and requires no special server software.

QuickTime VR allows you to view QuickTime VR panoramas and objects within your Web page. You'll need the QuickTime VR component to view these panoramas and objects. You can obtain the VR component directly from Apple Computer. Again, the syntax is quite simple:

```
<EMBED SRC="/quicktime.mov" WIDTH=136 HEIGHT=178 AUTO
PLAY=true>
```

INTERNET EXPLORER 3.0 AUDIO/VIDEO

On the Audio/Video front, Netscape has nothing over Internet Explorer. In fact, in the sound arena, IE 3.0 not only supports the **WAV**, **MIDI**, **AU**, and **AIFF** formats of Netscape but also RealAudio without a separate player.

As to video, IE 3.0 supports **AVI** and a more integral implementation of Apple's QuickTime. But it also supports the Motion Picture Experts Group (**MPEG**) format with audio, as well as a new streaming audio/video format titled ActiveMovie.

And the HTML commands, while not as simple as **EMBED** and not compatible with Netscape's attempt, may be more flexible. You can embed video clips in HTML by adding several new attributes, notably **DYNSRC** (Dynamic Source), to the **IMG** tag. Non–video-enabled browsers display still images in their place.

```
<IMG SRC="preview2.gif" DYNSRC="curling.avi" START=
MOUSEOVER LOOP=5>
```

This command, for example, not only displays the **CURLING.AVI** file automatically, but will also show **PREVIEW2.GIF** to those browsers that don't have AVI capability, and further, the clip starts when the user moves their mouse over the clip. The user doesn't have to click on the image - just position the mouse over it. This seemed pretty cunning actually. It then loops precisely five times. You can also use video clips with image map files for client side image mapping based on where on the video image the client clicks their mouse.

This dynamic source concept allows you to implement audio and video files in HTML, and to use a wider variety of file types than Netscape. You have complete control over borders, sizes, and the vertical and horizontal space allowed around the image. Like Netscape, you can also show a control to let the user control playback.

Additionally, IE 2.0 introduced a slightly different concept for sound files termed background sound. The **BGSOUND** tag allows you to create pages with background sounds or "soundtracks. Sounds can either be samples (WAV or AU format) or MIDI format. The sound is played automatically when the page is loaded.

```
<BGSOUND SRC="start.wav">
```

ActiveMovie is actually quite interesting, though it appears to be preliminary. Microsoft describes a format with MPEG audio and video in two synchronized streams. But beyond that, the architecture describes a filter and pin concept allowing you to connect various video and audio streams quite flexibly that goes beyond the simple playing of canned files. This could ultimately expand video on the web to include live camera and microphone feeds. ActiveMovie's success will likely hinge on capable conversion and creation tools.

Currently there seems to be more examples of audio and video on the web using the new Netscape LiveAudio and LiveVideo technologies. But the Internet Explorer 3.0 vision of audio and video seems broader, more inclusive, and ultimately more functional. Unfortunately for web designers, even the display of a simple .AVI clip uses different HTML tags for each browser.

VIRTUAL REALITY MARKUP LANGUAGE AND 3-DIMENSIONAL SPACE

In recent years there has been a movement to bring the concepts of virtual reality to the world wide web. The original concept of a computer interface resembling the real world dates back to 1965 when Ivan Sutherland laid out a research program for computer graphics in a paper called *"The Ultimate Display"* `ftp://sunee.uwaterloo.ca/pub/vr/documents/whatisvr.txt` "One must look at a display screen, as a window through which one beholds a virtual world. The challenge to computer graphics is to make the picture in the window look real, sound real and the objects act real."

The "virtual reality" concept became a fairly common theme in science fiction with such works as William Gibson's *Neuromancer*. David Raggett at Hewlett Packard Laboratories appears to have first coined the term Virtual Reality Markup Language and proposed extending virtual reality to the World Wide Web in a paper titled *"Extending WWW to support Platform Independent Virtual Reality"* in April, 1994. At some point in the common vernacular, this seems to have modified to Virtual Reality Modeling Language but we're seeing it referred to both ways on the web. The usual confusion.

Mark Pesce (The Community Company) and Brian Behlendorf began campaigning for a VRML language definition with mailing lists and newsgroups devoted to the subject. They met with Silicon Graphics engineer Gavin Bell in the summer of 1994. The concept was an open standard and language. After much online flaming and discussion, the group settled on the ASCII format subset of Silicon Graphics' existing **Open Inventor** 3D modeling language. In October, 1994, Gavin Bell, of SGI, and Mark Pesce and Tony Parisi of the Community Company, released the VRML 1.0 Draft document.

Gavin Bell and Paul Strauss, the original Open Inventor architect at SGI, developed QvLib, a C++ class library which can be linked into any VRML application, and is used to parse VRML into an internal object presentation. This forms the basis of a number of VRML viewers that have emerged since. It was then ported to Sun OS, LINUX, and Windows NT. This was available in January `95 enabling others to write their own VRML viewers. The VRML 1.0 Specification was published in May of 1995.

VRML is in its essence an object-oriented scene description language. It allows you to create shapes, apply textures and colors to them, have them viewed from a camera in space, apply lighting to them, and cause them to move around in response to rules you create.

But until recently, they have required external "viewers" to read the .**WRL** programs defining a 3-D graphic space. In this latest iteration of the browser wars, Netscape incorporates Live3D, a VRML viewer into their 3.0 Beta release. Netscape purchased Paper Software in February in a stock swap deal to acquire Paper Software's WebFX VRML viewer. Netscape has announced a Moving Worlds initiative that some 50 companies have signed onto and many believe will basically BE the next iteration of the VRML specification.

To use Live3D on your web page, you basically create a VRML code file with file extension .**WRL**. You must set up your web server to pass a new MIME type **X-VRML** with filename extensions .**WRL**. Finally, you simply reference the **WRL** file from any HTML page with a statement similar to

```
<EMBED SRC="http://www.boardwatch.com/vrml/
may96cv6.wrl" WIDTH=175 HEIGHT=125 BORDER=4
ALIGN=right>
```


Live 3D - Boardwatch Covers in VRML

VRML CODE FOR *BOARDWATCH* TUMBLING CUBE BACKISSUES

```
#VRML V1.0 ascii
Separator {
Info { string "Boardwatch Magazine Covers on Three Cubes and a Sphere."}

DEF BackgroundColor Info {string ".2 .4 .9"}
CollideStyle {collide FALSE}
DEF Cameras Switch {whichChild 0 DEF "Live3D"  PerspectiveCamera {position 0 0 5}}
DirectionalLight {
                    intensity  0.9
                    direction   1 1 0}
SpotLight {
            on        TRUE
            intensity   1
            color       0.2 0 1
            location    1 0 1
            direction   0 0 -1
            dropOffRate 0
            cutOffAngle  0.385398}

Texture2 {filename    "http://www.boardwatch.com/mag/covers/may96.jpg"}
SpinGroup {
            rotation 1 0 0 .01
            local FALSE
            SpinGroup {
                    rotation 1 0 1 .04
                    local TRUE
                    Translation {translation 0.0 0.0 2.0}
                    DEF Cube1 Separator {
                            WWWAnchor {
                                    name "http://www.boardwatch.com/mag/96/may/fable.htm"
                                    Cube {
                            width  1
                            height  1.35
                            depth   1.35}
                                                }
                                        }
                        }
                }

Texture2 {filename    "http://www.boardwatch.com/mag/covers/feb96.jpg"}
SpinGroup {
            rotation 1 0 0 .01
            local FALSE
            SpinGroup {
                    rotation 1 0 1 .03
                    local TRUE
                    Translation {translation 0.0 0.0 -2.0}
                    DEF Cube1 Separator {
                            WWWAnchor {
                                    name "http://www.boardwatch.com/mag/96/feb/fable.htm"
                                    Cube {
                            width  1
                                height  1.35
                                depth   1.35}
                                                }
                                        }
                        }
                }

Translation {translation 0.0 2.0 0.0}

Texture2 {filename    "http://www.boardwatch.com/mag/covers/dec95.jpg"}
SpinGroup {
            rotation  1 0 0 .01
            local FALSE
            SpinGroup {
                    rotation 0 0 1 .02
                    local TRUE
                    DEF Cube2 Separator {
                            WWWAnchor {
                            name "http://www.boardwatch.com/mag/95/dec/fable.htm"
                            Cube {
                            width  1
                            height  1.35
                            depth   1.35}
                                                    }
                                        }
                        }
                }

Translation {translation 0.0 -4.0 0.0}

Texture2 {filename    "http://www.boardwatch.com/mag/covers/mar96.jpg"}
SpinGroup {
            rotation 1 0 0 .01
            local FALSE
            SpinGroup {
                    rotation 1 1 1 .03
                    local TRUE
                    DEF Cube2 Separator {
                            WWWAnchor {
                            name "http://www.boardwatch.com/mag/96/mar/fable.htm"
                            Sphere{radius 1}
                                                }
                                        }
                        }
                }
}
```

This will create a box on your page with the Live3D animation within the box.

The sidebar shows the C-like scene graph code used on our web page to show three cubes and a sphere, with Boardwatch cover images applied to them, tumbling in 3D space. You can also click on any of these shapes and jump to the Fable of Contents for that issue using the WWWAnchor function.

The interesting thing about VRML is that everyone seems intent on selling a book about it. Actual VRML documentation online is scarce. We followed a hundred VRML related web links and found that they all pointed to each other, but few actually had anything beyond the original VRML 1.0 specification to offer. A few promised great things - if you want to buy the book and accompanying CD-ROM for thirty bucks or so.

Microsoft already had a VRML viewer available for their 2.0 Explorer, and with the release of THEIR beta 3.0 seem to be departing from the concept in favor of ActiveVRML, an apparently entirely different language that looks more like Visual Basic, appears to be much easier to program with, and doesn't appear to actually exist yet. Indeed, we were unable to get the previous VRML viewer to work with Internet Explorer 3.0 and Internet Explorer 3.0 was unable to view the Live3D **.WRL** on our web page.

But the description of the not-yet-available ActiveVRML from Microsoft is persuasive. It isn't at all VRML as described in Bell and Pesce's specification, and indeed we find the term ActiveVRML a bit misleading. But the ActiveVRML language looks attractive.

It basically defines objects and their rule-based behaviors and then lets them go. Once you've defined an object and its motion, you don't really have to revisit it again. The result is less code, and more 3D. Here's an example of the code necessary to create a ball that bounces on a horizontal plane.

LIVE3D/VRML 1.0 CODE TO CREATE BOUNCING BALL

```
loat Height = 9.0;
float BounceStartTime;

// position the ball as a function of time
updateBall() {
float globalTime = getSystemTime();          // what time is it now?
float flightTime = globalTime - BounceStartTime;      // how long have I flown?
        Ball.position.x = globalTime;
        Ball.position.z = Height - (flightTime - sqrt(Height))^2;
};

// test for a bounce
bounceTest() {
        if (Ball.position.z < 0) {
                BounceStartTime = getSystemTime();
                };
        }

// forever and ever, update the ball, increment time, and repeat
float Time = 0.0;
mainLoop() {
BounceStartTime = getSystemTime();
        Ball = readGeometry("sphere.wrl");
        repeat forever {
                updateBall();
                bounceTest();
                };
```

ACTIVEVRML CODE TO CREATE A BOUNCING BALL

```
// Create a ball and its motion
Ball = readGeometry("sphere.wrl");
ballHeight =(9 - (time-3)^2) until BounceEvent =>
ballHeight;
Motion = translate(time, 0, ballHeight);

// Create the bouncing event
BounceEvent = predicate(ballHeight < 0);

// Create the bouncing ball
BouncingBall = transformGeometry(Motion, Ball);
```

A rather thorough description of AVRML is available at **http://www.microsoft.com/INTDEV/avr/avrml.htm.**

The temptation is to dismiss Live3D and AVRML as bandwidth hogging toys created by sincerely and genuinely strange people. And at the tumbling cube, bouncing ball level, they may be. But in the hands of the right designers, these technologies dramatically extend the horizon of how we can develop easy to use interfaces for World Wide Web sites. As 3D space grows to incorporate audio and video, as well as graphics and animations, we think you'll see some stunning presentations online simply not possible previously. One company has a software program titled PhotoModeler that lets you create objects with surfaces extracted from photographs - lending some realism to the world of goofy cubes. **http://www.photomodeler.com/vrml.html**

Once again, Netscape 3.0 does VRML now. And Microsoft's description of their AVRML sounds much more persuasive architecturally, but isn't available yet.

VOICE COMMUNICATIONS

One of the most exciting developments of the May release was the inclusion of voice communications over the network in both the Microsoft and Netscape releases. Netscape purchased a company titled InSoft to obtain their CoolTalk program. Microsoft similarly acquired NetMeeting.

Voice over the network, or VON as our own VON columnist Jeffrey Pulver terms it, is an oddity from a number of perspectives. We see two main advantages of VON. First, and most obviously, it allows long distance communications worldwide without the usual long distance telephone charges.

Many companies spend thousands of dollars each month on long distance voice communications. And for some firms most of it is entirely internal communications between offices in various locations. Similarly individuals in America today typically have friends and family in various states and the monthly telephone bill can be a real cause of angst.

There is no magic to our existing long distance telephone structure. It costs no more to switch a call across town here in Denver than it does to connect to Washington DC. And on the Internet, it really doesn't. Data packets are just that, data packets. And it matters not what they contain - sound, video, text, or for that matter odors. We have consistently seen people at all levels of technology dismiss this simple economic function as not terribly important. It is. It subtly central to the entire concept of online communications. People do very much want to beat the telephone company out of the long distance charges and there is little they would not do to do it.

The second interesting aspect of voice communications is that if telephones are done in software, then features of telephones become a function of the imagination and creativity of programmers. The extant telephony company infrastructure has wrestled for years with how to deploy three more digits on a touch tone keypad and of recent years seem to have given up the quest as hopeless. Our telephone system is "standard" and the downside of standardization is that it freezes innovation in the technology.

Voice over data is not new. Hobbyists were digitizing sound and passing it over modems in the early '80's. Over the Internet, VocalTec was the first to offer a package that worked a bit like a telephone. This pretty much established that usable voice could be passed over 28.8 kbps or even 14.4 kbps connections. But the early packages relied on Internet Relay Chat servers so that users could "find" each other. The result was more like CB radio than a telephone system. And there have been several barriers to the wide deployment of VON software.

First, not all personal computers on the Internet have sound cards. And of those that do, even fewer have microphones. With the newer hardware available, a sound card seems to be standard equipment. My Toshiba laptop even has both a soundcard and a really quite excellent microphone built in. But there is a hardware component required to do this, and it won't be universal until these items are ubiquitous. On the topic, almost all sound cards allow you to plug in any of a number of speaker and microphone combinations. One of the things I've found amazing is that no one has stumbled on the obvious retro innovation of modifying standard telephone sets to plug into sound cards.
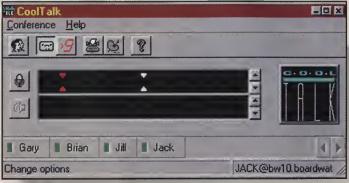
Second is simply the common threshold problem all technologies face. Currently voice over the network is in the hands of very early adopters who play with such things. Until you can reliably locate and connect to who you want to talk to, instead of who may happen to be out there, this will remain a toy. In practice, in the past we've found that even people we know are there and have the software, if they don't happen to have it running at the moment, they are not reachable.

Finally, most of the products have just been too techie. Camelot Corporation, for example, released a voice phone product that was just not installable. You could spend days fritzing around with microphone levels, playback levels, and

whether or not you were at 8 kHz or 22 kHz and what type of compression was used and how compressed it was, and half-duplex threshold levels. If you could get it to work at all, you could also probably pass the First Class FCC license examination and qualify to operate a television station transmitter. In the early stages, we think the software should resemble a telephone as closely as possible simply to instill a feeling of familiarity. And it should install easily.

The fact that Microsoft and Netscape include voice telephone products with their new browser releases is actually an enormous leap toward ubiquity. Vastly more people will become aware of VON and be empowered to use it. That Netscape's CoolTalk and Microsoft's NetMeeting are NOT interoperable works against this goal. The need for standardization is clear, but again note that standards tend to freeze innovation, and there is still a lot of potential for improvement in this genre.

NETSCAPE'S COOLTALK

http://home.netscape.com/comprod/products/navigator/version_3.0/cooltalk/index.html

CoolTalk Console

I'm a bit of a sucker for good software, and strongly biased toward developing VON as a method to drive nationwide local calling areas. So it is hardly prophetic that I would love this program. CoolTalk is indeed way cool. Sound quality is perfectly acceptable to me, and the installation was VERY easy. It automatically detects whether your sound card can do full or half duplex, and runs you through a little wizard setup allowing you to record and playback sound. So all the hard parts of doing such a program fall out immediately as fait accompli.

The holy grail of VON is full-duplex operation. Full duplex means that it works bidirectionally like your telephone - you can both talk and both listen at the same time, the standard state of American conversation. Half-duplex is one way communication - I talk and you listen, and then you talk and I listen, but we can't both talk at the same time.

CoolTalk claims full duplex operation and in the current market they have as good an implementation as is available. We use Creative Labs Soundblaster 16 cards that are the most ubiquitous sound card in the world of personal computers. It does have a "full-duplex" driver. But in CoolTalk operation, if I talk, I can't really hear the other end talk. If we both talk at the same time, both soundstreams get a little chopped up. It isn't really full-duplex. But it is reasonably easy to have a conversation.

God is in the details, and CoolTalk has done a lot of things right.

CoolTalk, like every VON product we've seen, still uses "servers" to let people using the program find each other. In this case, there are five servers operated by Netscape as **live1.netscape.com** through **live5.netscape.com** and hopefully more by the time you read this. When you bring up CoolTalk it immediately tries to register you on one of these servers. The problem here is that I don't really want to go on CB radio, but worse, the response to CoolTalk during May was a bit enthusiastic. You can't get on these servers. You can't get on them ever. In fifty tries, we got on twice. Who needs a phone you can only use at 4:00 am? If you do get on, it does indeed list a directory of however many people you want to download. We were surprised by the number of Asian users who have jumped on this technology. The program was just released and it is all over Asia and Europe. The Internet is never more obviously global than in this instance. While we were playing, Jesus called from Mexico. Which pointed up the next problem. Jesus didn't speak English, and my Spanish wasn't apparently up to snuff either. It led to a very brief and confused communique.

On installation, CoolTalk asks if you want to install WatchDog. You do. WatchDog installs in your startup directory and so is activated any time you bring up your system. It can respond to incoming calls by launching CoolTalk. One of our criticisms of CoolTalk is that it doesn't just ring the telephone indefinitely like a telephone does. It times out after about three seconds if the other party doesn't answer immediately or it can't make the connection immediately. We found that some systems, particularly if you are doing anything on them, can't launch CoolTalk fast enough to accept the connection, even with WatchDog running. In fact, even on relatively fast machines, we've seen it take eight or nine seconds to bring up the program. This should be adjustable, or in any event more forgiving. Too often, you can't make a connection to a machine that IS running CoolTalk and WatchDog. If you attempt the connection three or four times, it will finally have it up enough to link up. UNSAT.

Once a connection is made, a terribly interesting thing happens. The two CoolTalk's exchange "business cards". That's right. On installation, or any time later, you can fill out a form listing your name, mailing address, voice telephone, fax, e-mail, and even attach a **.BMP** graphic photo of yourself. CoolTalk also adds your machine address and logon to this. When you connect to another CoolTalk user, the two programs exchange business cards and the photo of the calling party actually appears on your little CoolTalk console. You can click on this picture to view the entire business card.

I was just really wowed by this feature. First, it is Caller ID on steroids. You don't have to answer at all if you don't want. But more to the point, about half of every telephone call I make or take is devoted to mindlessly reading out and spelling mailing addresses, telephone numbers, and company names. If I get this automatically on connection from the calling party, and give it out automatically when I call someone, very often I'm left without a whole lot of work to do on the phone after all.

CoolTalk Answering Machine

CoolTalk also has a very capable answering machine function. You record a greeting and depress the answering machine button whenever you're not available for calls. Callers who later connect receive your business card, hear your recorded greeting, and then can record their message. They click HANGUP when they are done.

A numeral on the console indicates the number of messages waiting up to 9. You simply click the numeral to call up a LIST of messages. You don't have to listen serially through the entire series as in a telephone answering machine. The list indicates who called and when. You can position a cursor on any of interest and their little photo, from their business card, shows up in the upper right corner of the display. You can click this image to view their business card. And you can click on the name in the list to listen to their recorded message. To call them back, you simply click on a little telephone icon and it automatically dials the system address left in their

CoolTalk Business Card Setup

Calling Brian Noto

business card. Again, this isn't just as good as a telephone, it's a dramatic improvement. Having seen this once, I get irritated just looking at the black telephone set on my desk.

As to sound, there are adjustments to make, but they aren't too difficult. On the main console there are plus and minus keys for sound volume and microphone volume. There are also two sliders, one for voice threshold activation and one for echo control. The Voice slider sets a threshold at which your voice is transmitted, to avoid sending background noise. The echo slider keeps RECEIVED sound from being retransmitted back out the microphone to whoever you are talking to. This is all still a bit techie and in fact we were repeatedly confused about the direction of the echo slider. Automatic echo cancellation and for that matter automatic gain control has been around long enough to cease qualifying as rocket science.

In addition to the directory link to Netscape's servers, CoolTalk sports an excellent local directory where you can add entries. It is quite easy to connect to anyone based on their machine name or IP number in the form of **<anyone>@204.144.169.17** for example. You can add this to your directory but you can also specify it as a QuickLink and it will appear at the bottom of the CoolTalk console. You can then simply click the button to dial them directly.

Further, Netscape has a web version of their worldwide directory at **http://live.netscape.com**. Again, this is almost totally useless as it updates from the **live.netscape.com** servers, they are always busy, and so we found it very rare to actually get any listings. But it illustrates a particularly cunning element of CoolTalk that we again find way cool - HTML links to CoolTalk addresses.

Basically, you can add a reference to an **.ICE** file on your home page of the form **Connect to Jack using CoolTalk **. You must then create an associated file titled **JACK.ICE** with information of the following form:

[OpenDVE]
invite=JACK@204.144.169.10

You must also add a mime type to your web server of type **X-COOLTALK** with file extension **.ICE**.

The effect is that when web surfers click on **CONNECT TO JACK USING COOLTALK**, your system passes them the associated **JACK.ICE** file, Netscape then loads CoolTalk and

automagically places a call to the address in the **.ICE** file. So you can add a reference to your web page allowing people to call you with a simple click of the mouse. Ultimately this is much more usable than the worldwide directories - if you have a web page. Feel free to try mine at **http://www.boardwatch.com/office/jack.htm.**

You can leave me a message indicating if about 80 hours of fritzing with these two browser releases was worthwhile in doing an article of this length.

CoolTalk sports two other features that are somewhat interesting. The program includes a whiteboard and a text chat function. The whiteboard allows you to load a graphic image, and share it with the other end while either or both of you draw circles around it, point to things, and generally collaborate. You can do this while you are talking voice. You can also set up a text chat between the two of you. I suppose the thinking here is to document the conversation? I don't have a use for it. But I have seen people using this with CoolTalk when they don't actually even have a sound card and can't talk voice at all.

In short, we found CoolTalk to be the best thing we've seen yet in VON. Like all good software, it spawns an immediate short list of things we also wish it did. Most immediately, I love this business card thing. But there's really not a good way to SAVE business cards. If you delete the message, the card goes with it. If you talk to someone else directly, when you drop the connection the card is gone. I want to be able to send it to a database. And I would like to be able to export the database as well. And why can't I move the business card out of the answering machine and into the directory?
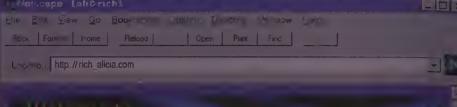
CoolTalk lacks a conference feature. You can call somebody, but you can't call two somebodies at the same time. And of course, ultimately this kind of software wants to have a live video option. The whiteboard is cool, but I would like an option to send a Word file or a spreadsheet to whoever I'm talking to as well - even if I'm talking to their answering machine. A simple SENDFILE function would be most welcome.

The remote directory scheme, aside from being totally overloaded, is the only way anyone has come up with to address the issue of dynamic IP numbers. Most dialup callers, and about 60% of those on the Internet are dialup callers, use dynamic IP addressing. They get their IP address when they connect, lose it when they hang up and will have a different one the next time they connect. In respect to VON, they don't ever really have a permanent phone number. You might think of them as homeless people. I think the solution, not only to this specific situation, but to the many that arise from dynamic IP address assignment, should be at the Internet Service Provider location with some form of IP address aliasing. Perhaps a new block of totally nonsense IP addresses that the local ISP reroutes to whatever real IP address the caller is using at the moment. If we can use IP address spoofing to hack the Internet, we ought to be able to use it in reverse for something useful.

CoolTalk is available with Navigator 3.0 for Windows 95, Windows NT, Windows 3.1, SunOS, Solaris, HP-UX, Digital Unix, and IRIX. Versions for Macintosh and additional Unix platforms will be available soon.

We did lock up the machine twice quite totally using CoolTalk. We have no idea why.

MICROSOFT NETMEETING

http://microsoft.com/ie/conf/

Microsoft's entry in the communications game is a program titled NetMeeting. Again, we found the overall vision of NetMeeting to be terribly attractive, and the current version available just terribly broken.

The basic voice communication feature of Net-Meeting works reasonably well. The audio quality is actually noticeably superior to the CoolTalk program. But we did find that turning the Full-Duplex function on in NetMeeting caused a seriously choppy mess to ensue on the audio front. Leaving it off, the sound quality was really quite good.

Like CoolTalk, NetMeeting uses a server to locate those with NetMeeting up and running for CB radio style communications. The User Location Service (ULS) provides a mechanism for users of NetMeeting to locate other people on the Internet, even if their Internet addresses change. A sample of the ULS can be found at **http://uls .microsoft.com/**. The Microsoft server is also clogged up quite a lot and it causes a serious delay in loading the program while it attempts to connect to the server. You can turn this feature off and we rather quickly did.

Microsoft NetMeeting - Voice over Net

Actually, less than 10 minutes after installing the program, we were summoned to a conference by a gentleman on the east coast and we were impressed with the audio connection.

You can use NetMeeting to simply connect to someone if you have their IP address. But it lacks most of the features of CoolTalk we found engaging for this use. There is no answering machine. You cannot make an adequate case that it HAS a local directory though machines you have called previously will be retained in a pick list. And there is no analogy to the CoolTalk business card function. The control panel is rather plain and uninspired and we found locating options and features in the program awkward and non-evident.

NetMeeting sports a number of features not available in CoolTalk. In addition to a white board and chat, it also allows you to "share" any Windows program or document such as a Microsoft Word document or Excel Spreadsheet over the network while talking. And it allows you to host a multi-user conference.
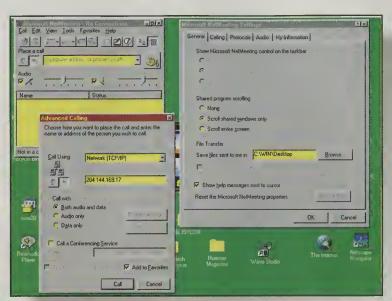
In practice, most of it doesn't work. The whiteboard does and the text chat function more or less works. But we spent an afternoon, on a local LAN with three of us on the same floor and able to confer in person, trying to get the conference feature to work where we could all three talk. It simply wasn't happening.

Further, the feature to share a program caused absolutely comical and fantastic things to happen to our mouse/cursors. There was a fight for control even when none of us were trying to control it. The SHARE and TAKE CONTROL buttons appeared to be useless. And for most of the time, at least two of the three of us were completely rebooting our machines to get some form of control of our own cursor. Overall, the afternoon looked nothing so much like three nervous monkeys trying to engage in intercourse with a football on a waxed tile floor. There was a lot of scratching and hissing, but not much by way of result.

There was a feature I did fall in love with. You can very easily send a file to anyone you are in conference with by simply clicking SEND FILE and browsing your way to the file. It transits the link and pops up on their Win95 desktop. While the document sharing and whiteboarding may be sexy, the ability to just call someone and drop a file on them is more in line with our local form of "collaboration."

NetMeeting, rather interestingly, is not limited to TCP/IP links. It can also use Novell's IPX protocol and indeed appears to be able to work by direct dial modem. We did not test the modem connection.

We find it important that Microsoft has made the first step toward developing standards that are actually deployed in the industry. They have signed up over 120 other vendors to support the technology in NetMeeting, including Creative Labs. Creative Labs (**http://www.creaf.com**) developed the SoundBlaster series of sound cards that totally dominate sound on the IBM compatible PCs. They are also developing their own video and audio conferencing products.

NetMeeting currently supports open, international standards from both the ITU and the Internet Engineering Task Force (IETF). The ITU T.120 data conferencing standard enables real-time multiuser collaboration and file transfer over the Internet, intranet or telephone network. NetMeeting also supports the Realtime Protocol (RTP) from the IETF, used to transmit and synchronize real-time streams over the Internet. One of the vendors included is networkMCI and rumors abound of a closer tie than just using the same standards.

"The Internet continues to grow by leaps and bounds, both in the number of users and the availability of new applications such as the Microsoft NetMeeting Internet conferencing software," said Philip Knell, president and general manager of networkMCI Conferencing. "MCI plans to deliver multipoint Internet conferencing services compatible with NetMeeting."

More than 20 companies have alreaded announced shipping or planned delivery of conferencing products and services compatible with NetMeeting.

NetMeeting is a much more ambitious view of audio conferencing. The ability to have an actual "conference" with multiple participants after the fashion of an IRC chat server but with sound is very attractive. And the ability to open a spreadsheet or Powerpoint presentation and actually run it in a window on everyone's machine is engaging. But we failed to get most of these advanced features to work.

NetMeeting DOES work for one-to-one communication with excellent audio quality. But for this purpose, it lacks many of the features that make CoolTalk so engaging.

Again, it would appear Microsoft has the vision, and Netscape has working code.

SUMMARY

In general, we found Netscape's deployment of new technology more precise, more operational, and more available. What they have released more or less works and you can use it today. It displays an economy and speed admirable in software. And they appear to be working very consciously toward cross-platform operation between Macintosh, Windows, and various UNIX flavors.

Microsoft's release shows a vastly larger vision of the future, and architectural elements that truly open a whole new world of possibilities to online communications. But a lot of it either doesn't work yet or in some cases isn't even available. It is more focused on the Windows95 and WindowsNT platform.

For example, the NetMeeting software encompasses not just voice communications and white board, but sharing of major application programs and from inception seems designed for group communications versus one-on-one links. Microsoft has attacked the problem of interoperability with an open standard. Do not discount participation of such vendors as Creative Labs,.Apple and networkMCI. Microsoft's product is simply broader in scope with regards to voice over the net. But the CoolTalk implementation from Netscape works better, and sports very well done features either omitted or glossed over in the Microsoft release. God is in the details. The easy to use directory, quicklinks, answering machine, watchdog launch, and business card exchange in CoolTalk simply make it more usable today.

Similarly video. Pooh-pooh this technology at your peril. Netscape now allows you to simply embed any video file in your HTML page and it works. Microsoft has used a completely different HTML tag to do the same thing, and few examples exist of web sites using them. But they seem more capable, support a wider array of file types, and allow you to display them more flexibly. And Microsoft's Active-Movie control shows a breadth of architectural vision based on MPEG with audio, and a pins and filter design, that ultimately will let this technology do what it wants to do. And what we think it wants to do is point to a video camera from an HTML page and let users click on the camera and look out of it at the world in a slightly buffered near real time -

as well as view canned, produced works in near television quality with sound.

The same can be said of 3-dimensional space. Netscapes Live3D follows the VRML path reasonably faithfully and it works NOW to dramatically extend the horizon on design of web space. We had tumbling/rotating cubes with Boardwatch covers pasted to them up and tumbling in an hour. We could not get Microsoft's original VRML to work at all with Internet Explorer 3.0, and their new product is in some sort of closed beta and isn't even available yet. It represents a radical departure from the C-language look and feel of scene graphs and essentially abandons the whole concept of VRML 1.0 and Open Innovator. But the language they are building appears to be much easier to deal with, not surprisingly looks more like Visual Basic than C, and we suspect could ultimately result in better performance and richer more complex 3-D designs. Ultimately, it should allow us to go beyond what VRML as currently defined could ever do.

The bottom line is that we're using Netscape for now. It is faster, and the features it has work better. Live3D and CoolTalk are indeed tres cool. But Microsoft has clearly laid the groundwork here for the long term win. And they are not being coy when they talk about extending the operating system to the Internet. They really are doing it and with a very persuasive architectural vision.

The browser competition is indeed a war. It will be fought on the web pages themselves as web designers are forced to support one camp or the other and will very nearly fracture the web. It will be fought among Internet Service Providers, as some support Netscape, and others opt for the free packaging program from Microsoft. It will be fought among developers as thousands of small companies scramble to find niches by developing the latest hot ActiveX control, Java Applet, Java Script, VBScript etc. And for some users, it will be fought on their desktop as they install and use TWO browsers to take advantage of the latest features on various web sites. Netscape currently has an overwhelming share of the browser market. But Microsoft is making some very right moves to take it away.

Ultimately, we see the competition as driving an incredible lunge forward in software encompassing the World Wide Web, the desktop operating system, and every software application to be developed in the future of personal computing. Netscape clearly doesn't find resistance to be futile as their revenues continue to climb toward $250 million this year and as their servers act as the very heart of the world wide web. They don't appear to have any desire to be "assimilated." But clearly, we aren't in Kansas any more Toto. And to counter the mass of Microsoft as it steers toward this target will take more than "If I Only Had a Heart."

We will continue following the developments with future columns on JavaScript development, VBScript development, ActiveX, Voice Over Net, and HTML design in an attempt to make it rational for our readers.◆

Telebits

"WEBAHOLIC" BOOK TO BENEFIT UNICEF

Humor author G. Gaynor McTigue (*Life's Little Frustration Book* and *You Know You're Middle-Aged When...*) asks Internet addicts to submit their best completions of the sentence, "You know you're a Webaholic when..." at **mailto:jerrym321@aol.com** or **http://members.aol.com/jerrym321/books .htm**. When he finds a publisher, McTigue will donate all advances and royalties to the United Nations Children's Fund. It's a fun and generous project, to which we're glad to contribute:

> "...your Internet service bill exceeds your car payment."
> "...your house catches fire and you hit **http://www.911.com**" (Try it!)
> "...the only pictures you have of your kids are JPGs."
> "...someone asks 'What's on the tube?' and you grab your mouse."

HOTMETAL PRO 3.0 DEBUTS

A WYSIWYG display and drag-n-drop importation of text and graphics highlight the advances in HoTMetaL Pro 3.0. Users can clip text or images from other documents, drag the selection to HoTMetaL and plop them into a Web page; the program automatically converts the blocks into anchored hypertext references. Up to four different Web browsers can be added to a customizable tool bar, for authors who want to accommodate everyone. A graphical tables and frames editor, point-n-click forms creation, CGI script editor, support for multimedia, ActiveX, Java and all other Netscape and Microsoft extensions make HoTMetaL Pro 3.0 a leading-edge Web design tool. **$159** U. S. or **$69** for existing HoTMetaL owners. SoftQuad Inc.: 56 Aberfoyle Crescent, 5th Floor, Toronto, Ontario, Canada M8X 2W4. **(416) 239-4801** voice; **(416) 239-7105** fax; **http://www.sq.com**

"HEAT AND PPP PAID" APARTMENTS MULTIPLYING

We featured the fiber-optic wired Spring Isle Apartments in March's "Internetica." Seems the idea is catching on fast. Bakersfield, California, will soon have a 138-unit apartment complex named The Polo Grounds, featuring 1300 square-foot two-bedroom units wired for ISDN. Rents will range from the high **$500s** to mid **$700s**, according to developer Andrew Fuller. Call Scott Heaton, **(805) 648-1212**, or hit **http://www.jetlink.net/~andrew/** for investor information.

Manhattan's East Village is home to a 28-unit "cyber-community" with a dedicated T1 line. Rents are typically New Yorkish: **$1,500** to **$1,750** for a one-bedroom apartment, plus **$85** to **$115** a month to ISP Spark Internet. Seventy percent of the tenants - most of them students, models, businesspersons and computer workers - opt for the high-speed Internet service, according to Spark spokesman Greg Salgado.

MMB TEAMATE BUNDLED WITH LINUX

TEAMate is the only Unix server product that combines a Web and BBS interface. Users can access a TEAMate server with any Web browser, a Windows or Mac client, a VT100 terminal or an e-mail query. It's now being offered with the Linux operating system for **$495**, including all TEAMate modules and an unlimited-user license. A maintenance and support contract costs another **$495** per year. A Netscape plug-in version of the client is being tested and should be available this summer. MMB Development Corp.: **(800)832-6022** or **(310)318-1322** voice; **http://www.teamate.mmb.com**

WEBINATOR SPEEDS, SIMPLIFIES MULTI-SITE INDEXING

The *Webinator* corporate Web search engine installs quickly and indexes multiple Web sites in a common

index, providing up-to-the-minute query access to all intranet information. "I had the search engine set up and installed on the afternoon I received it," said Kevin McCarthy, Webmaster at Advanced Micro Devices. An SQL query interface to the database provides maintenance and report access. Webinator runs on Unix, Mac and NT Web servers. Thunderstone Software - EPI Inc.: **(216)631-8544** voice; **(216)281-0828** fax; **http://www.thunderstone.com**

10 MBPS WIRELESS DATA TESTS BEGIN

CAI Wireless Systems, a wireless television broadcaster, began tests of high-speed Internet access in Washington DC in May. The service uses high-speed wireless modems that downloaded data to consumers seven times faster than T1 speeds. By year-end, CAI expects the data transfer rate to nearly triple, reaching 27 Mbps, as wireless modem technology advances. Currently, user-to-host data rates are limited to traditional dialup speeds. The wireless system "has the potential to quickly reach a much larger customer base, particularly in outlying areas where traditional cable has yet to be installed, at much more affordable installation costs," according to company president John J. Prisco. CAI Wireless Systems: Albany, New York **(212)885-0491** voice

FARALLON ANNOUNCES $750 ISDN ROUTER

With the beta release of *Netopia* v1.2 firmware and an introductory 25% discount, Farallon Communications sets a new price/performance mark for ISDN workgroup routers. The new features include static IP routing, a user-configurable AURP timer, and a PING utility. It also enhanced security, compression, WAN event log features, and interoperability with central-site routers. With discounts, the 5-user PN630 lists for $749, while the unlimited-user PN640 lists for $1195. Contact: **(510) 814-5000** voice, **mailto:info@farallon.com** or **http://www.farallon.com**

INTERCEPT TURNKEY GATEWAY SYSTEM

A simple, cost-effective way to put your company on the Net is the **$7,495** *Intercept* gateway server from Network Intensive. Combining Web, FTP, e-mail and news services in one Pentium-driven box, the Intercept includes a firewall for security. An extra **$100** per month provides remote maintenance service so your employees never need to touch the box. Network Intensive: **(800)273-5600** voice or **http://www.ni.net**

TROLL-BAIT: THE NATIONAL ENQUIRER

Right at home with the other conspiracy theorists, UFOlogists, Elvis-watchers and stark ravers in the alt.journalism newsgroup you'll find reporters from the *National Enquirer* soliciting leads and tips for Olympic Games stories. You could earn a **$100** to **$400** "lead fee" by sharing your favorite anecdote about Russian hurdlers who were injected with grasshopper genes at birth. But that would be cruel. Ah, what the heck... they're begging for it!

ERNST & YOUNG ANSWERS QUESTIONS ON THE NET

Big Six accounting firm Ernst & Young now provides answers to business and financial questions submitted via e-mail within two business days. Our first question is, "How can we afford the **$6,000** annual fee?" (On second thought – don't answer that!) Brian Baum, Ernst & Young's director of Internet service delivery, told Reuters that the service will initially target companies with revenues of **$25 million** to **$200 million**. Ten companies signed up for the service in its first half-day of operation.

CRESCENT INTERNET TOOLPAK EASES ACTIVEX DEVELOPMENT

The *Crescent Internet ToolPak* suite, including a set of sixteen ActiveX controls and an Internet mail "Wizard," manages Virtual Basic developers' Internet protocol needs and enables them to create sophisticated Internet-enabled applications with a minimum of coding. As an integrated suite of OLE controls, Internet ToolPak ensures compatibility between controls and the ability to build sophisticated applications. Crescent Internet ToolPak also includes demonstrations and sample programs to shorten the learning curve. Tools include MIME and UUEncode/Decode Support; Remote Access Services allowing Internet applications to be built without the need for an external dialer; Telnet Form to quickly incorporate Telnet functionality into applications

for network management, updating of Web sites, modify mailing lists, etc.; and high-level FTP and Mail applications. List price is **$199**; owners of v1.0 can upgrade for **$99**. Cresent: **(800)352-2742** voice or **http://crescent.progress.com**

PHONE, E-MAIL, NET PHONE ADDRESSES IN ONE DIRECTORY

Four11 Corp. has compiled a unique, cross-medium directory at **http://www.four11.com**. From a single page, you can look up a person's phone number, street address, e-mail address and "net phone" address. The White Pages listings contain over 100 million entries, 6.5 million e-mail addresses, personal web pages, and PGP public keys. The service was recently selected by Yahoo! for that search engine's "People Finder" feature.

ONSALE WEB AUCTION CELEBRATES 1ST ANNIVERSARY

Back in June, 1995, we noted the debut of *Onsale*, an innovative online auction house created by Alan Fisher and Jerry Kaplan (founder of GO Corp. and father of Lotus Agenda). The enterprise celebrated its first anniversary this May in style, with sales passing the **$500,000** *per week* mark! The original plan was for a mixture of rare, collectible items and factory closeouts. Today, the auction board is dominated by computer and electronic gear. Apple, Intel and other PC brands are there at fire-sale prices, plus every kind of software and peripheral device. Telephones, VCRs, radar scanners, automatic bread bakers, auto and home entertainment systems are also abundant. Under "Things With Wheels" we found no Hummers, but a couple of mopeds starting at a minimum bid of **$749**. AT&T, apparently pursuing it's giveaway "effortless selling" strategy, has dozens of **$2899** notebook computers up for bid, starting at just **$5** (the high bid was about **$975** when we checked). Onsale, Inc.: 1953 Landings Drive, Mountain View, CA 94043. **(415) 428-0600** voice, **(415) 428-0163** fax, **http://www.onsale.com**

WEBCOMPARE: ONE-STOP INFO ON SERVER SOFTWARE

When shopping for Web server software, it's infuriatingly tedious to collect all the information you need. The most popular servers' home pages are, of

course, busy. Then you have to strain out the graphics and marketing hype. What's left is in no particular order, so it's hard to compare features to features across platforms. The *Webcompare* site at **http://www.webcompare.com** makes life easier. Over 50 Web server programs are documented; there's even one for Amiga systems. Servers are categorized by operating system, and standardized feature charts cogently describe what each package can do. There's also a glossary of "feature definitions" for the not-so-sure. Browsers get similar treatment. Created by Paul Hoffman, the site was recently purchased by David Strom, founding editor-in-chief of *Network Computing* and independent networking consultant. As a contributing editor at *Infoworld* he gets to play with the megabuck test lab gear. Strom's independent performance evaluations of various servers can be found at **http://www.strom.com** along with his excellent *Web Informant* newsletter. David Strom, Inc. (no trademark worries here!): 938 Port Washington Blvd, Port Washington, NY 11050. **(516) 944-3407** voice, **mailto:david@strom.com**

SERVER PLUG-IN PROTECTS COPYRIGHTS

The quality of Web content won't improve until content producers gain protection from copyright infringement. Direct piracy – copying files to one's own server – and indirect piracy (unauthorized links to others' copyrighted pages) dilute original content creators' ability to earn a profit. Without profits to fuel development, Web content will devolve into advertisements, sales traps and amateur ravings. (David Hakala will have much more on this subject in the August issue.)

The *SiteShield*™ server plug-in is the start of an attractive solution: a plug-and-play watchdog that provides two forms of content protection. First, SiteShield allows image files to be downloaded and viewed in a browser, even saved to a local disk. But saved images cannot be read from disk or retransmitted in a viewable form. Porn peddlers will love that feature – and they can recoup its **$499** price tag pretty quickly. However, nothing seems to prevent piracy by capturing a screen and saving it to disk – tedious but simple.

The second shield is "reference protection," which recognizes and blocks out-of-domain requests — that is, requests made from any page that is not on

your own Web site. Graphics, video, audio, Java applets and CGI programs are protected by this technique, according to the developer. JavaScripts, which are embedded in the unprotected HTML code, apparently would remain vulnerable.

Despite these gaping flaws, and the utter lack of protection for textual content, SiteShield appears to be on the right track. We can't recommend buying SiteShield as is, but keep an eye on this program's evolution. Maximized Software: **(888) MAX-SOFT** or **(714) 955-5800** voice; **(714) 955-5801** fax; **http://www.maximized.com**

APARTMENTS ON THE WEB

What Generation X Webaholic has time for lawn mowing, snow shoveling or cleaning gutters? REAL cyberpunks live in apartments. *Apartments for Rent On-Line, Inc.*, a subsidiary of the *For Rent Magazine* apartment guide empire, lists over 8,500 apartment communities and **1.5 million** units, in Arizona, California, Colorado, District of Columbia, Florida, Georgia, Kansas, Maryland, Minnesota, Missouri, Nebraska, Nevada, Oregon, Texas, Utah, Virginia, Washington and Wisconsin. Hit **http://www.aptsforrent.com** (an unfortunate choice of domain name) and search by state, city, section of city, price range, number of bedrooms, bathrooms, pets/no-pets and other pertinent criteria. Order additional info on interesting prospects by e-mail, snailmail, fax or phone call. Your name, address and other data are carried over from one order form to the next, so you don't have to retype all that stuff. Sure beats cruising leasing offices on a Saturday.

MOTOROLA $169 VOICESURFR MODEM: LOADED!

Modems are becoming as bloated as browsers. The new **$169** VoiceSURFR (yep, that's how they spell it) includes 28.8 Kbps data and fax, plus SmithMicro's QuickLink Message Center software, Spry's Internet in a Box (including a Mosaic Web browser; e-mail software; Newsreader software for review of UseNet user forums; FTP

software for file transfers; and Gopher software to get to Internet sites quickly); and *Web Explorer*, a comprehensive 250-page book detailing how to use the Internet. Also offered with the VoiceSURFR is Motorola's Alphanumeric paging software that allows users to send text messages to an alphanumeric pager. The modem also includes Caller ID. In addition, the modem comes with DOOM, 3-D action software, and HERETIC, the interactive fantasy game from id software, and is bundled with America Online and CompuServe software. The product is available at retail stores. Motorola's Information Systems Group (ISG), Transmission Products Division: **http://www.mot.com/modems** or 5000 Bradford Drive, Huntsville, AL 35805-1993.

COLLEGENET: EASY APPLICATIONS FOR 40 SCHOOLS

One of Editor at Fault Dave Hakala's criteria for selecting a college was, "How short is the application form?" It made sense to him back in 1970; any school that demanded five pages of personal data, reasons why it should admit him and quadruplicates of everything just did not understand who was the seller and who was the customer. (Florida Institute of Technology, with its single-page one copy form, was the selected vendor, and miraculously survived the next five years; see **http://www.fit.edu**)

Colleges are much more competitive – among themselves — in this post-Baby Boom era. Paperless applications processed with alacrity are available from more than 40 institutions via *CollegeNET* at **http://www.collegenet.com**. Among these schools are Virginia Tech, Florida Southern, Palm Beach Atlantic, Mercer University and the University of Sydney, Australia. "We anticipate receiving as many as 20 percent of all our applications electronically during the next cycle via CollegeNET," said Kelly Queijo, admissions spokesperson at Virginia Polytechnic and State University.

Students fill out one application, and common data is automatically transferred to successive applications. Thereafter, students can check the status of an application online at any time. Application fees can also be paid online. CollegeNET also provides online information on thousands of colleges and universities.◆

CYBERWORLD MONITOR Frank X. Sowa

COPYRIGHTS NEXT BATTLE IN CYBERSPACE

Frank X. Sowa is president of The Xavier Group, an international consultancy providing strategic planning, forecasting, training, and development of business and communications systems for organizations since 1981. As a certified software consultant for Softarc's First Class, and a reseller for other companies, he configures customized BBS systems for organizations, complete with "regular content updates." Sowa is also founder and sysop of SEED.NET (412) 487-5449, "the online incubator" for small businesses, a seamless BBS-to-Internet (PPP) provider, with business start-up assistance and seed capital available online. mailto: franksowa @xavier. seed.net

As the cybernauts fight the Communications Decency Act, Congress is sending its next volley at the online world: the new NII Copyright Protection Act. The bill would make significant changes in existing copyright laws that could cripple public libraries, squash educational uses of computers, and bankrupt online services and Internet Service providers, while making users pay for information they now get for free.

The bill stems from the failure of the Judicial System to lay down clear rulings regarding the protection of intellectual properties in cyberspace. Copyright owners therefore have lobbied Congress to take direct action.

The new Copyright Act was introduced as House Bill H.2441 and as Senate Bill S.1284. It would make all online services, BBSs, and Internet providers strictly liable for infringement (even in cases where a third-party placed the information on the service), subject to penalties up to $500,000 and five years in prison. Services will be held responsible for policing their networks and immediately removing any materials that may be protected intellectual properties.

Congress is moving quickly on this bill, hoping to see it in place by fall to please its proponents, who say they are losing billions of dollars.

WHOSE OX IS BEING GORED?

Publishers, recording artists and moviemakers see online users as a huge new market and low-cost distribution channel. They also see themselves losing billions of dollars to the piracy the online medium permits. They want their intellectual property rights guaranteed by online service providers.

Proponents of reform claim that the loose control of Copyrights in cyberspace lead to exploitation of proprietary materials, church secrets, patents, copyrighted materials and trade secrets by criminals, spies, foreign countries, and terrorists.

Businesses, led by large multinational corporations, also favor the new act. Many feel that copyright reform, along with other new regulations, are just what the Net needs to permit profitable online transactions. These companies see the potential of online libraries becoming big businesses that will pay back their multi-million dollar investments in Internet technology.

Congress also favors copyright reform, as a way to milk more revenue from public data. Last year, $60 million was appropriated to bring five million Library of Congress documents online by the year 2000. A Defense Advanced Research Project (DARPA) contract of $24.4 million was doled out to six universities to research the placement of multimedia libraries on the Internet. The Department of Education earmarked $50 million to enhance university research and long-distance learning. The Federal Laboratories are working to place millions of research citations, technology reports and other data storehouses online for easy access by collaborative research projects.

Government agents feel that the taxpaying public needs to get some return on this investment. They feel that "paid access," rather than "free access," could make these files a National Asset — bringing in millions of dollars to the federal coffers. Copyright protection for publicly funded data is required to make it profitable.

The high-tech industry finds itself in a dilemma. It wants protection for software and the profits from Internet commerce, but it also wants to avoid becoming the "deep pockets" in any lawsuits between copyright holders and pirates.

Piracy of copyrighted material is a bigger problem online than in other media, according to proponents of the new bill. Thousands of perfect unauthorized copies, undistinguishable from original digital productions, can be made and distributed with virtually no effort. The music industry complains that such illegal copying is rampant, depriving its members of untold millions in royalties and sales.

Many publishers, software developers and others whose intellectual property is vulnerable to piracy online are holding back their wares from online distribution channels. If proponents win the strong protections they seek, the result could give cyberspace users a wider variety of material to view, or buy, on the Internet.

STRICT LIABILITY WILL CHILL ONLINE DEVELOPMENT

On the other hand, the act as written would have a chilling effect on start-ups, cyberspace investment, new online distribution channels and online clearinghouses of "free" information. Fledgling businesses could lose everything in a single infringement suit. Many planned ventures will be scratched if legal risks rise too high. Investors would turn away from new online ventures to focus on financing the more established content-providers which could survive lawsuits.

The act's sponsors claim the new copyright protections will punish only those access providers who are found guilty of harboring copyright infringers. Don't believe it.

Congress' intent with the new law is to go after the access provider as well as the infringers (if they can be found) and to "let the courts decide the outcome."

A staff member at one of the sponsor's offices, who asked not be named, stated, "It is generally felt that most online operators know what materials are copyrighted and which ones are not. They are as much a partner in crime as the offender... You can't tell me that the providers don't know that those files marked 'Star Trek' or 'Lion King,' for example, are copyrighted materials."

The staffer went on to say that they would "probably make examples out of some of the boards that had large, illegally-copied file archives of movie, music, news, book, and adult material collections." The staffer cited one BBS mentioned during testimony that may have "over 3,500 such files, publicly available. We're just giving law enforcement officials something more to work with."

The law gives bullies "more to work with" too. Last summer, the Church of Scientology found no problem making use of the existing Copyright law to legally harass what they called "intellectual property infringers." Unfortunately, this same Section of the law also appears in the two versions making their way through Congress. It reads:

"At any time, while an action under this title is pending, the court may order the impounding, on such terms as it deems reasonable, of all copies, phonorecords, or electronic records claimed to have been made or used in violation of the copyright owner's exclusive rights and of all... other articles by means of which such copies may be reproduced."

The Scientologists' lawyers went to defendants' homes with armed law enforcement agents and seized computer systems, books, archives, copy machines and other possession. The sysop was publicly branded as a criminal in his own community, even before trial.

Any group can use the same provisions to confiscate everything used to run an online service, even before an infringement case goes to court, or even before the defendant's lawyer has had a chance to talk to the judge. This travesty of due process is happening with greater frequency as a result of the new anti-cyberporn laws. In many cases the searches and seizures are found in court to go far beyond the limits imposed by the court's warrant. The court's warant in the Scientology suits, cited "fair use" exemptions which were ignored in the wholesalee seizure.

Just the threat of a huge damage award against a commercial online service or Internet service provider could have a devastating backlash throughout the industry overnight. This act may spell the end of the hobbyist market, since hobbyists would be personally liable for any such damage awards.

If this act becomes law, online services will have to police their sites for potential copyright infringements (as well as "indecent" materials). It will also be necessary to build a litigation war chest, the money for which will come from consumers.

LAW ALSO WANTS TO REIN IN "TRANSMISSION" RIGHTS

The new law, which places copyright owners' rights first, actually treads on the original author's rights. The music industry is alarmed because musicians are bypassing music company contracts by distributing original materials via the Net. "This could undermine an entire industry," one music representative said. "It must be stopped!"

The firms which own the rights to traditional profitable uses of original works now want near-total control over every usage of a work. IBM recently cut lucrative deals with EMI Music Publishing and Multimedia Archive and Retrieval Systems to create an online music library that allows producers to access content and receive online rights clearance. To protect those contracts, they want what they call "transmission" rights protections.

These transmission rights, similar to existing rights held by songwriters over the playing of their songs in a public place, would extend the definition of "performance rights" to the transmission of music and other works via the Internet — even though the sound files might never be played. The law would also make it more difficult for performers and original authors to resell or give away their materials on the Internet.

"FAIR USE" IN JEOPARDY

Libraries and universities are concerned that, without matching changes in the "fair use" rules, copyright holders will effectively prevent the development of public online libraries and long-distance education. Fair use is a long-standing copyright doctrine that allows, for example, a book reviewer to quote passages in a book without paying royalties. It also gives institutions like libraries and schools special privileges to copy and circulate copyrighted work without payment. Libraries and schools fear that such rights could be gutted by the bills, as they are now written.

The libraries and schools worry about self-policing, as well, since they know that illegal copying may be uncontrollable in their own environments. They also fear financially devastating lawsuits that could easily break most public institutions.

Commercial copy vendors like Kinko's and Sir Speedy would also come under tight scrutiny if the new laws are enacted.

HASTY LAW IS BAD LAW

Amending Copyright Laws hastily is a bad move. Yet inaction is an action itself. We can't afford to lose our strategic lead in the commercialization of cyberspace, which may happen if online distribution of intellectual property continues to be restrained by lack of clearcut protections for content creators.

What is so troublesome, though, is the total lack of concern for the big questions regarding copyright protection. Namely, why do we need such protections in the first place? Who pays for information and why? How will the new law lead to more secure copyrights? How does the U.S. stop piracy of intellectual properties in a global market?

If the global issues aren't dealt with — the Act itself will do much greater harm to our strategic lead in cyberspace.

As it is written, the NII Copyright Act will cause terrible problems to both the growth and the operation of Internet and Online Service Provider companies. The law needs to be sent back to committee for addition of "fair use" exemptions and immunities for online service providers who do not knowingly facilitate copyright infringements.◆

Java Flavor of the Month

by Steve Graves

A BACK BUTTON AND A BOZO FILTER
Using JavaScript Functions

Like jazz musicians, programmers and HTML designers have traditionally learned their craft by studying the work of others. Also like musicians, novice JavaScript writers must pay their dues before they can expect to create original and valid works. JavaScript writers must master basic concepts such as Script Order and Flow Control; Values, Names, and Literals; Expressions and Operators; Objects and Functions.

We will examine the works of other writers and analyze their scripts to learn what we can from them. We'll borrow elements for our work and modify them to meet our needs. Finally, we will create our own JavaScripts, offer them to the public, and return to the programming community some of what was given to us when we were novices.

JAVASCRIPT DOCUMENTATION SOURCES

If you want to jump ahead of the class, Netscape offers JavaScript documentation at **http://home. netscape.com/comprod/products/navigator/ version_2.0/script/**. You'd better hurry; rumor has it that Netscape may begin charging for JavaScript documentation.

SysNews.Com, my online publication, maintains a JavaScript Resource Center at **http://www.sys news.com/java/java.htm** with links to dozens of helpful Java and JavaScript resources. It also maintains a free Ask an Expert conference center where you can get help with your JavaScript questions.

QUE Corporation released *The Complete Idiot's Guide to JavaScript* by Scott J. Walter & Aaron Weiss in March. Although a bit cute for my taste, I found it readable and informative. (Why do so many publishing companies believe that bad humor makes a technical topic more understandable?) The improvement over Netscape's documentation is about a three in order of magnitude. Walter and Weiss assume pretty much that the reader has no programming or script writing experience. It's the best JavaScript book on the market I have seen so far. For order information, navigate to **http:// www.winternet.com/~sjwalter/javascript/** or **(800) 428-5331**. You can also find it at most retail book stores.

HOW TO SWIPE A JAVASCRIPT FROM ANOTHER SITE

Since we will spend much of our time analyzing and running example scripts written by others, let's begin by learning how to identify and capture JavaScripts from other Web sites.

Say you are browsing the net and you come across a nifty animation. How can you tell if it is a JavaScript versus a Java Applet, an animated GIF or some other technology? Simple. From the Netscape menu, choose **View | Document Source** and look for the JavaScript tag pair **<SCRIPT>** and **</SCRIPT>**.

Capture the script - including the starting and ending tags - by selecting the script and copying it to your Window's clipboard. Alternatively, from the Netscape Menu, select **File | Save As** to copy the entire HTML page to a file on your system.

You can analyze and modify the script with your favorite text editor. Be sure to save the file as ASCII text.

To see the results of your modifications, from the Netscape menu select **File | Open File** and select the Javascript file. Netscape will run your modified program just as it would as if it were presented by a web server.

TAG ATTRIBUTES

Some HTML tags accept *attributes*, additions to the basic tag which modify the HTML output. In most cases, attributes are words or numbers that define an element or a quality of the output such as size, color, or position. For example, the size attribute controls the relative size of text in HTML documents.

The convention used to specify attributes for JavaScripts is:

<SCRIPT attributes>JavaScript Code</SCRIPT>

The **Language** attribute is one of two supported by the opening <SCRIPT> tag. The Language attribute is mandatory according to Netscape's documentation, but in reality JavaScripts work just fine without it — as long as the browser used is Netscape Navigator. Microsoft's Internet Explorer may try to interpret JavaScript as Visual Basic script if the language attribute is omitted; generally, Explorer will crash.

The second <SCRIPT> tag attribute is **src**. Theoretically, the "source" attribute can be used to call JavaScripts stored in files other than the current HTML page. But Netscape disabled this attribute due to some unforeseen security problems. Although the source attribute was supposedly reinstated with the release of Atlas/Navigator 3.0, I could not get it to work.

Steve Graves is the founder of *Technical News Service Inc. (T-N-S))* and editor of *SysNews.Com-* The Journal of Online Products and Services. His online magazine for sysops and webmaster, includes news articles, editorials, reviews, software guides, and software libraries. As a full time software reviewer, Steve installs, runs, and maintains the BBS and Internet software he reviews. Steve lives and works in Cheverly, Md., about a half mile from Washington, D.C. with his son Brendan, age 10, and his wife, Mary. He authored the *20 minute Chess Master*, one of the first interactive computer books. Steve holds commercial instrument, and instructor pilot certificates and enjoys reading, computers (some days), magic and music. Steve can be reached at **mail to:editor@ sysnews.com**, **http://www.sys-news.com** or **(301) 773-8899** *voice* (10a.m. to 6 p.m. EST M-F)

COMMENT TAGS

HTML includes a **comment** tag pair (<!— and —>)that hides text strings from the user:

<!—Most Web browsers would ignore this text- - ->

Netscape 2.x can detect JavaScript code embedded within comment tags. This allows Webweavers to hide their JavaScripts from browsers that cannot interpret JavaScripts. Such browsers will display JavaScripts as text – an unsightly mess – if the scripts are not hidden by comment tags.

JavaScripts take the following general form:

```
GENERAL FORMAT
FOR JAVASCRIPTS

<HEAD>
<SCRIPT
LANGUAGE="JavaScript">
<!——
Your JavaScript Code goes here.
—— - >
</SCRIPT>
</HEAD>
```

Notice that we placed the JavaScript tags between the HTML <head> tags. Theoretically, you can place your JavaScripts anywhere on an HTML page. However, functions (sections of code that perform specific tasks; similar to small sub-programs) must always be defined before calling them. Since Netscape does not evaluate or run JavaScripts until after the entire page has been loaded, placing your scripts between the <head> tags ensure that your functions are loaded before they can be called.

HISTORY BUTTONS

I promised Dave and Jack a JavaScript "back" button. The following JavaScript uses document history buttons to take the user back and forth within a frame. By contrast, Netscape's Back button loads the previously visited frame. Place these buttons anywhere on your pages as you would any form. You might find it helpful to use invisible tables to fix the exact position.

```
JAVASCRIPT "BACK" BUTTON

<center>
<FORM>
  <INPUT TYPE="button" VALUE="<<"
onClick="history.go(-1)">
  <INPUT TYPE="button" VALUE=">>"
onCLick="history.go(1)">
</FORM>
</center>
```
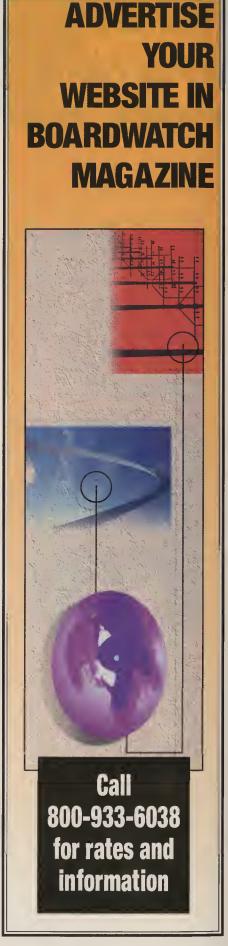
"OnClick" is the name of a JavaScript EVENT. An event triggers or executes a JavaScript function. The "onClick" event triggers or runs the JavaScript program when the user mouse clicks on a link or a form element Next month we will cover events in detail.

The *history object* tracks previously visited URLs and contains two properties: *current* and *length*. The *current* property is equivalent to the *location.href.* Both contain the value of the current URL. The *length* property tracks the number of sites visited since logging on.

The history object supports three methods: back(), forward(), and go(). History back() moves the user one link back; forward () moves the user one link forward. Go() offset moves the user to a specific point in the history list. Use a positive integer to move forward to pages visited most recently. Use a negative integer to move backwards to pages visited most early in the session. The go ("substring") lets the programmer send a string instead of an integer value. [history.go (www.boardwatch.com)] JavaScript will fetch the NEWEST URL item matching the string.

Why not just use Netscape's backbutton? Because JavaScript gives up control once the user goes to another page. Use history buttons when you wish to restrict user choices to a preselected set of Java/JavaScript enhanced HTML pages. Programmers can use the location and history objects to good effect when designing guided tours, online tutorials, or maze games.

The Javascript of the month begins on the next page.

JavaScript of the Month

Each month I will pick and analyze a JavaScript that meets three criteria. 1. It must demonstrate JavaScript's power and flexibility. 2. It must be freely available to Webmasters. 3. The application must be unique, practicable, cool, or otherwise of value to the online community. If you have written such a script or know of one, please e-mail Steve Graves at mailto:editor@sysnews.com.

Alistair B. Fraser, Ph.D., a Professor of Meteorology at Pennsylvania State University, wrote the following JavaScript and comments. He started his professional career with the Canadian Government as a weather forecaster in Vancouver before returning to school to obtain a Ph.D. in Meteorology from the Imperial College of the University of London.

*Prof. Alistair B. Fraser,
BOZO Filter author -
http://www.ems.psu.edu/~
fraser/fraser.html*

A BOZO FILTER for a Web Page

JavaScript may be most useful to individuals who use a hosting service to present their web pages. The problem with many hosting services is that they do not allow customers to upload and use CGI scripts because of potential security problems. JavaScript puts power into the hands of Web authors, since JavaScripts are inherent to the HTML pages and are executed on the client platform and not on the server.

Access control is normally handled through the web server security functions. Fraser's "BOZO" JavaScript allows the HTML author to deny access requests from specified URL addresses. In other words, you can prevent another Web site from establishing a link to yours.

According to Fraser, "Like the politician who occasionally experiences an unwelcome endorsement, there will be pages which receive visitors through unwelcome links. I will leave it to your imagination as to what sort of pages you might not appreciate posting links to your page.

"I created the BOZO FILTER for the victims of such predatory pages. It enables you to specify a list of URLs from which you do not wish to receive visits."

Be warned that this script is by no means bulletproof. For starters, since JavaScript is supported only by Netscape browsers, this script can be easily circumvented by using any browser other than Netscape. Look at it as an old-fashioned hook latch used to secure screen doors. It will not keep out a determined intruder but will deter the casual unwelcome guest.

Implementation

Copy the script below and paste it onto your HTML document between the </title> and </head> tags.

To customize the script for your web page, edit the following lines:

var numb =4

This line specifies the total number of URL bozos you wish to block.

bozo[1] = "http:// ....".
bozo[2] = "http:// ....".

These lines specify the absolute URLs that you intend to block. Add as many as you wish (incrementing the number), but make sure the total is equal to the **numb** variable specified in the previous line.

Member's Only Filter

Frasers's JavaScript can be easily modified to provide reverse screening so that *only* visitors from specific URLs can view your pages. In the IF statements above, change the comparison operator from "equal to" (==) to "not equal to" (!=).

This inverts the entire script so that ONLY visitors from designated URL's can view your pages. This might actually work better than the original JavaScript because users can not just switch browsers to circumvent the script. This application can be useful if the author wishes to restrict access to specified individuals.

someone with a strong background in journalism or publishing to make a Web site interesting and worthwhile.

The Web is desperately trying to do the very things that the BBS world has done for years. I say let the BBS systems do what they do best and not try to force a system that is not presently equipped to handle the job attempt it. The best solution is a telnet client to a BBS which allows you to browse the Web and then jump to a BBS system for other functions.

Something else that some Web site operators don't seem to understand is that when you take something from someone else and post it on your site, it's called theft. For some bizarre reason, there are operators who apparently think if something is in a computer, it is all right to use it in any way they want without permission.

Techno-geek #1: "Putting new material on our Web site all the time is a real drag. This is like work, dude."

Techno-geek #2: "Yea, it really sucks. Hey, I just saw some neat stuff on another site. Why not just take that and post it on our site."

Techno-geek #1: "Great idea. With all the Web sites around the world we could have an unlimited source of material without paying a dime! Gawd, I love technology!"

Suppose you wanted to start a magazine. You have two choices. You can hire reporters, editors, proof readers and other personnel, pay them reasonable salaries to produce material, then rent or lease offices and fill them with all the equipment you need to produce the final product. The result may be that you make money or you go broke — that's the chance you take.

The second choice is that you can save a ton of money by picking up copies of other magazines from the local newsstand (or save even more by "borrowing" them from friends or the local doctor's office). Then all you have to do is tear out the pages with the articles and photos you like and paste them into your magazine. You wind up with a publication that has the best articles and photos you can find and it cost you almost nothing to produce.

Of course, if you did this with magazines, you can bet that you would find your little behind in court quicker than you could say "HTML." Where I come from it's called theft, plagiarism, larceny and copyright violation. The whole Internet "thing" is still new, but the day will come when these violations will be enforced. My advise is to stop stealing and start doing your own work.

Now, before I get flamed for having the nerve to actually make disparaging comments about the sacred Internet, let me make a few things clear:

First, I am not saying that the Internet does not have value. I use the Internet and often find it a valuable resource. There are some wonderful things on the Internet and the Web, but there is also a lot of junk.

I am also not saying that every Web site operator or Internet provider is crooked or incompetent. On the contrary, the majority of the operators are honest, hard-working people who know what they are doing. But, there are enough people around who are either incompetent or outright crooked that the whole business is beginning to get a bad reputation. As an online service provider, I am concerned and I think every other honest provider should have the same concerns.

I am also not saying that there is no hope for the Internet, there are redeeming values and things are beginning to get better. Things are changing and one day the Internet may actually deliver on all the promises. But for now, as far as I am concerned, it's a big waste of time, energy and money. Of course, it is possible that I just don't "get it." ◆

Notes From The Underground by Wallace Wang

E-MAIL PRIVACY: TO PROTECT AND INVADE

Wallace Wang is the author of *CompuServe For Dummies*, *Procomm Plus for Dummies* and *Visual Basic for Dummies* (all published by IDG Books) as well as *Surfing The Microsoft Network*, published by Prentice-Hall). He also does stand-up comedy in the San Diego area, and has appeared on A&E's "Evening at the Improv" TV comedy club. He can be reached via e-mail at: 70334.3672 @compuserve.com or bothekat @aol.com or bo_the_cat@ msn.com

When you use the Internet, anything you send or receive gets broken up into packets of data and routed across computers throughout the world. Someone could intercept any data you send and receive, and you may never know it. While it's highly unlikely that someone will get much enjoyment out of your congratulations to Grandmother on her 99th birthday, you may have more valuable information that you don't want displayed for anyone to see, such as love letters or proprietary corporate documents.

If you wouldn't feel comfortable mailing this information on a postcard, then you probably won't like the idea that your e-mail is wide open to interception and viewing either. As a simple solution, encrypt your e-mail using a program such as Pretty Good Privacy (PGP).

Of course, taking the time to encrypt all your e-mail can be a minor nuisance. Unless you (and the person receiving your e-mail) get into the habit of taking this extra step, it's likely human nature will prevail and you won't bother using encryption after a few tries.

To make encrypting your e-mail easy, grab a copy of *Private Idaho* (http://www.eskimo.com/~joelm), a utility program that works with PGP to encrypt your e-mail. For an additional level of security, Private Idaho also makes it easy to use anonymous remailers to further protect your privacy.

ANONYMOUS REMAILERS

Basically an anonymous remailer lets you send e-mail that no one can trace back to you. Many people use anonymous remailers so they can express their opinions or leak out information without risking the wrath of their boss or government authorities. Know something dangerous about your local nuclear power plant but don't want to risk getting run off the road by hired thugs? Send your information to the press through an anonymous remailer. Imagine all the information that could leak out of the tobacco industry, North Korea, or the White House if people there could only speak their minds freely.

HOW AN ANONYMOUS REMAILER WORKS

When you use an anonymous remailer, you send your e-mail from your computer to the remailer, which is another computer connected to the Internet. This remailer computer strips away your real name and address and replaces it with a phony address.

Once it has masked your e-mail in this way, it sends your e-mail to its final destination, whether it be a newsgroup or an individual mailbox.

To cover your tracks even further, you can use multiple remailers. Send your e-mail to the first remailer (which strips out your address). Then instruct this first remailer to send your e-mail to another remailer. Continue this process in two or more separate anonymous "hops" and it will be nearly impossible for anyone to trace or monitor your e-mail. To instruct remailers where to send your e-mail, you typically must organize your message as follows:

From: Name@YourAddress.com
To: remailer@RemailerAddress
Subject: Anything

::
Anon-To: destination@address

This is my message.

Notice that your real address only appears when you're sending e-mail to the remailer. Once the remailer gets your message, it ships it off to the address defined by the **Anon-To** field. (The two colons let the remailer know a destination address will follow. That way the remailer doesn't think the Anon-To field is part of your real message.)

If you wanted to get fancy and filter your e-mail through multiple remailers, your message might look like this:

From: Name@YourAddress.com
To: remailer@RemailerAddress
Subject: Anything

::
Anon-To: second@RemailerAddress
::
Anon-To: destination@address

This is my message.

In this example, you're sending your e-mail to the first remailer located at the remailer@ RemailerAddress. This first remailer then sends your message to a second remailer located at second@RemailerAddress. The second remailer then sends your e-mail to its final destination at destination@address. For the truly paranoid, you can keep adding remailer addresses indefinitely. To get more help on chaining remailers together, visit the http://www.replay.com/staff/usura /chain.html site.

If you'd rather avoid the cumbersome and tedious typing of different remailer addresses, try the *Community ConneXion* anonymous remailer at `http://www.c2.org /remail/by-www.html`. Instead of forcing you to type multiple remailer addresses, this remailer lets you point and click on the names of all the different remailer sites you want to filter your message through. Community ConneXion is also unique in that it accepts E-Cash for payment of its services, which is (theoretically) as untraceable as ordinary cash.

One of the most prominent anonymous remailers is located in Finland. Supposedly this remailer is frequently used by Russian (ex-KGB) criminals, so if you use this anonymous remailer, you might be able contact these people and bid on some old nuclear warheads the Russians might have for sale.

Community ConneXion Specializes in Privacy

Perhaps the biggest problem with remailers is that they tend to appear and disappear as quickly as democracies in Third World countries. Running an anonymous remailer costs time and money, and there's no way remailers can charge for their services because asking someone to pay by check or credit card effectively destroys the anonymity that a remailer is supposed to provide. After all, your e-mail is no longer anonymous if the remailer computer has to track who sent the e-mail so it can bill you for its services.

Of course, anonymous remailers aren't always anonymous. Some remailers require that you open an account with them first. This means that whoever runs the remailer also has a record of your real e-mail address. If you commit a major crime that causes the police to come looking for you, the police could raid the anonymous remailer computer and track you down.

To further protect your privacy, an anonymous remailer may hold your e-mail for a random period before forwarding it to their final destination. This delay can prevent spies from noting that your e-mail arrives at the anonymous remailer at 4:00 and then leaves exactly one minute later, allowing the spy to trace its destination.

If a spy is watching an anonymous remailer, he may be able to note the exact time your e-mail arrived. But what happens if the anonymous remailer holds your message temporarily along with several hundred others, then randomly sends out these messages in a different order at different times? Now

it's virtually impossible to determine which message may be yours that the anonymous remailer is sending out, preventing a spy from determining your e-mail's destination and thus protecting your privacy even more.

Don't think that anonymous remailers allow you to conduct criminal activities though. If you harass others through e-mail, send out death threats, or plot bomb attacks against innocent people, the anonymous remailer administrators will likely help the police find and prosecute you. In other words, don't abuse the privilege of anonymous remailers.

HOW SECURE ARE ANONYMOUS REMAILERS?

Anonymous remailers are only as secure as the people running them. A spy could set up a so-called anonymous remailer and read every message that passes through. While encryption can protect your e-mail contents to a limited extent, the real danger may come from exposing your real e-mail address. For that reason, it's a good idea to use an anonymous remailer in another country.

For example, someone living in Communist China should view an anonymous remailer in Communist China with suspicion. But that same person would probably be safe using an anonymous remailer located in Finland, Canada, or Mexico.

Even if an anonymous remailer isn't run by a government spy, it could still be run by a jerk who enjoys reading other people's mail and revealing your real e-mail address. So if you use an anonymous remailer, you have to trust that the remailer administrators really will send your e-mail out without revealing your identity.

It's also possible that hackers (including those hired by the government) could break into the remailer computer and intercept your e-mail with or without the remailer administrator's knowledge. Rather than take the time to crack a remailer computer, a government could conceivably just collect all e-mail heading in and out of an anonymous remailer. If the e-mail is encrypted, the government could crack them open later using their vast array of supercomputers.

While anonymous remailers and encryption can help protect your privacy, nothing can guarantee absolute privacy. If you want absolute privacy, don't say or write anything (which is what the authorities want from you anyway).

USING PRIVATE IDAHO

To use Private Idaho most effectively, you need a copy of PGP or a similar encryption program, which you can download by visiting `http://web.mit.edu/network/pgp.html`. To hunt out an anonymous remailer to use, visit the `http://www.cs.berkeley.edu/~raph/remailer-list .html` site.

If you want to learn from people who are actually using anonymous remailers, browse through the Usenet group `alt.priva cy.anon-server` and read about the latest developments in the anonymous remailer world. In case you want more information about privacy on the Internet, visit the Electronic Privacy Information Center at `http://www.epic.org`.

Unfortunately, Private Idaho only runs under Windows, so all you Macintosh users are out of luck unless you have

enough memory to run a Windows emulator like SoftWindows. Since Private Idaho is a 16-bit program, you can run Private Idaho using Windows 3.1 or Windows 95. Best of all, Private Idaho is freeware, which means you can use it without paying anything. (After all, if you had to pay to use Private Idaho, then you would have to reveal your real name and address, which is the type of information that Private Idaho tries to conceal in the first place.)

Pretty Good Privacy Encrypts E-mail

So try encryption and anonymous remailers to further protect your privacy in a world that seems to be embracing greater oppression and censorship. With a program like Private Idaho, you no longer have any excuses not to protect your privacy — unless your government has already confiscated all your computer equipment first.◆

THE SOUND OF THE INTERNET

Voice/Video On The Net

by Jeff Pulver

Jeff lives in Great Neck, New York (although one could argue he really lives on the net and sleeps in his home in Great Neck). These days Jeff is a self-proclaimed "Net Technologist" and publisher of *NetWatch* (http://www.pulver.com/netwatch), a web magazine which tracks enabling net technologies with a specific focus on audio, video, marketing and services on the net. He is also the project manager of the Free World Dialup experiment (http://www.pulver.com/fwd), and the moderator of several mailing lists including: *VON*, *NetWatch* and *IPhone*.

You can e-mail Jeff at mailto:jeff@pulver.com

The ACTA petition asking the FCC to halt distribution of VON software continues to pull the VON industry closer together. The day following the deadline for filing comments with the FCC, the VON Coalition and Booze-Allen Hamilton (http://www.bah.com) teamed up for a meeting of the long distance telephone companies, federal regulators and the VON software companies entitled "The Role of the Internet in Telecommunications." A follow-up industry conference is now scheduled in New York City for September, 1996. Please mailto:vonconfer ence@pulver.com for more information.

For now it appears the use of VON technologies on the Internet and intranets will continue to grow at a record pace. However, in order for these technologies to gain widespread acceptance, it will be critical for the various VON companies to find a way to work together on interoperablity...both on a technical and a marketing level.

VON PRODUCT ANNOUNCEMENTS

At the Spring 96 Internet World show in San Jose, I saw Netscape's demonstration of interoperablity between the company's own *CoolTalk* and *TeleVox* (http://www.voxware.com). AT&T announced its own VON product and intention to join the VON marketplace on the closing day of the show.

Once interoperablity becomes a reality, the next big hurdle will be directory services. Most of these products use a server-based application to track the number of simultaneous users who are online. CoolTalk can communicate with TeleVox, but unless both people prearrange to meet at a specified time, there is no sharing of directory services. You can't tell that somebody you are looking for is online.

Some businesses are adopting these directory service technologies. A great example can be found at http://bro.net/aae. In addition, some adult entertainment services are also early adopters of these technologies.
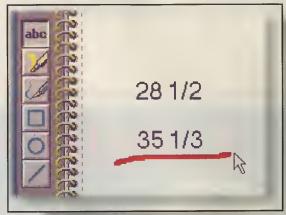
JFAX Communications, Inc., recently launched the first global network that enables users to receive faxes and voice mail messages directly via Internet e-mail. "JFAX lets everyone in the world with a fax or a phone reach you via e-mail. Your contacts don't have to be on the Internet or even have a computer," said Jaye Muller, president of JFAX Communica-

tions. For more information or to sign up for their service, drop by the JFAX home page at http://www.jfax.net.

VON PRODUCTS OF THE MONTH

Internet Phone 4.0

I tested the early beta copy of Internet Phone 4.0 from VocalTec, Inc. (http://www.vocaltec.com). Overall the sound quality was much improved over earlier versions, and some of the additional features, such as Voice Mail and Muting (mike and/or speaker) will be a welcome addition to VON hobbyists.

Whiteboards add visual aids to VON calls

Internet Phone 4.0 includes a collaborative whiteboard, which allows two or more people to share a common workspace and allows each party to draw, type, insert graphics and other OLE related technologies. Whiteboards have become a standard feature in corporate conferencing tools such as Intel's *Proshare* (http://www.intel.com). The origin whiteboards on the Net can be traced back to the Mbone and the **wb** tool. These days it is very common in Mbone conferences to use the wb tool as a way to provide a way for people to see a common view of related information.

One of my first experiences using a whiteboard was with Jeff from Los Angeles. We played a game of tic-tac-toe. The concept worked well, but I found drawing letters with my mouse a bit tedious. I've grown accustomed to using my mouse to click, double click and maybe right click once in a while. But draw...never. I never considered myself much of an artist. A drawing tablet would be a fine addition for anybody who is taking whiteboarding seriously.

Microsoft

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Some people use whiteboards as a GIF exchange — "if you show me your picture I'll show you mine."

The following features have been added in Internet Phone 4.0:

- Whiteboard
- File Transfer
- Text Chat Mode
- 7 day trial instead of 60 seconds/ session
- Voice Mail
- Support of third-party Codex including Truespeech

A new interface has been added, although the reactions to its animations have been mixed. The animations are cool the first few times, but I turned them off to conserve resources. The revised stats are a little difficult to understand. With previous versions of Internet Phone the information was presented in a more compact fashion. With the latest version of the product, multiple windows must open to view the equivalent amount of information.

On the cool side, you can now actually put people on hold, and mute the speaker and the microphone. The audio controls are a welcome improvement and the self-test welcome.

One of the features I would like to see added to all VON products is the ability to know whether or not somebody is engaged in a conversation before clicking on somebody's name.

Many of these features work well and are admittedly cool — but are they compelling enough to drive hobbyist users — the majority — to buy an upgrade? I suppose only time will tell. The behavior of these early adapters may reflect the economic opportunities for other companies to sell upgrades of their freeware software products over the Net.
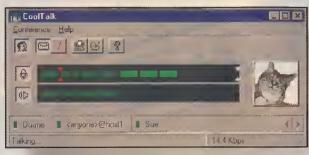
CoolTalk

CoolTalk is the VON plugin included with the full version of Netscape Navigator 3.0, a. k. a. "Atlas." I tested Beta Version 2.0. The audio was choppy at times, and at other times quite good. The user interface is well designed and intuitive.

VON now comes with Netscape Navigator 3.0

Cooltalk offers the following features:

- Includes data collaboration
- Shared Whiteboard for graphics and images
- Chat tool for text based conferencing or sharing text
- Answering machine functionality

- Full duplex audio from 9600 to 28.8 Kbps
- Expandable with future modules
- Interoperable with Unix, Win3.x/95/NT and (eventually) Mac

If you ever want to take a look at the number of users available to chat with at any moment - point your browser to `http://live.netscape.com`.

The major advantage Cooltalk offers is the fact that once 30 million people gain access to Netscape 3.0, some will start using VON. The questions are when and how many? Will the entire Browser user community use VON? Probably not. But certainly many people will get hooked.

Most of the hype surrounding VON technologies concerns their potential to bypass long-distance carriers. But the truth is that the vast majority of these users are hobbyists experimenting with VON to place phone calls they would not otherwise make. In fact, my own long-distance phone bills increased at times due to my involvement in the Free World Dialup project.

Please feel free to send `mailto: jeff@pulver.com` and set the subject to **Boardwatch Reader VON Questions/Comments.**◆

CABLE ACCESS by Neal Schnog

CABLE 96: A CRYSTAL BALL FOR THE CABLE INDUSTRY

Neal Schnog, based in Berkeley, CA, is President of CYP, Inc., a cable television publishing and consulting firm who's primary titles are the Cable Yellow Pages and Cable Communiqué. Current projects include an online version of Cable Yellow Pages, and consulting with companies on issues ranging from marketing to technology. As a 15 year veteran of the cable television industry, he has owned and operated numerous cable systems throughout the west and continues to operate cable systems as President of Colonial Cablevision, Inc. Schnog has a variety of other investment interests extending from communications to snow board manufacturing. In his spare time he skis, mountain bikes, hikes and roots for the Syracuse University basketball team, his alma mater, where he received a BA in Economics in 1981. Schnog can be reached at mailto:schnog @cableyellow pages.com

During the last week in April, cable television companies and their suppliers met in Los Angeles for Cable 96, the 45th annual convention of the National Cable Television Association (NCTA). The theme "Consumers' Choice and the Competitive Challenge" attracted the largest group of attendees ever, over 28,000, all wondering what the future holds. Three short years ago the cable industry's greatest wish was to escape federal rate regulation in trade for competition. Someone should have warned them, "be careful what you wish for, because you just might get it." With the passage of the 1996 Telecommunications Act, the cable industry got its wish and this year's NCTA convention was the industry's first real attempt to come to grips with the consequences.

The show started with a bang as two of the cable television industries former archenemies, Vice President Al Gore and Federal Communications Commission Chief Reed Hundt, turned cable allies and bestowed the highest praises on the industry for its efforts to serve the community. "On issue after issue, you have honored the obligations of citizenship and served the public interest in ways that are truly impressive," Gore told the audience. "It would be great if broadcasters followed your lead." Gore's comments included praise for cable's participation in education, support of the v-chip and commitment to children's programming.

A day later came Reed Hundt telling endearing stories of his daughter and her love for cable television. Hundt echoed many of Gore's sentiments and acknowledged that his upbeat remarks were a huge departure from years past when the industry was locked in battles with the FCC over the 1992 Cable Act. Two years ago, when he addressed the NCTA, he said it was "suggested that (he) stand up and say: Thank you and goodbye." The line got applause and Hundt continued on to say that he knew "you (the industry) did not get everything you wanted, but I hope that you got everything you needed." For all the praises, these may have been the most prophetic words of the show, for if cable is to be a primary supplier of broadband services to the home, it has many needs to fulfill on the new super highway of competition.

Telecommunications as we know it is in the process of the greatest restructuring of all time and the NCTA provided a glimpse of what the future may hold. From programming and content providers to network management and equipment suppliers, everyone had something new to sell to an industry which is quickly converging with telephone, computers and the Internet. Telecommunications as we know it will soon be defined by three major parts — local communications access providers, national and international network backbone or transport providers and content services. To survive the change, a company needs to know who they are and where they fit.

CABLE OPERATORS AS INTERNET ACCESS PROVIDERS:

Cable operators realize the advantage in speed their broadband networks can provide for everything from Internet access and digital video on demand to voice and local data transport services. It is here where cable systems seem to see their niche as company after company, including Tele-Communications, Inc. (TCI), Time Warner Cable and Comcast Corporation, have announced plans to provide Internet access and other services via cable modems and digital converter boxes.

To date, very little has been said about cooperating or working with current Internet Service Providers (ISPs). According to David Ames, Chairman and Chief Executive Officer of Convergence Systems, Inc., "There are a few companies working with ISPs but it's just beginning. There is a culture problem. Where we've done it to date there have been culture clashes — data people vs. RF people." Maybe it is a difference in cultures, but it may also be that cable operators, along with their brethren at the phone companies, are out to capture the local access market.

Cable companies, telephone companies, and a few daring entrepreneurs are squaring off over local access to Internet, video and local phone service. Real competition has arrived and every company has promised to invade another firm's once-exclusive territory. These organizations want *all* the local access business. In Columbus, Ohio, Time Warner is being overbuilt * by Ameritech; US West is overbuilding Cox in Omaha, Nebraska. (*An overbuild is where one cable or phone company installs competing facilities in another company's territory.)

In St. George, Utah where a small up start named Clear Vision Cable TV, Inc. is overbuilding Falcon Telecable, the battle has already begun. According to Brad Oliverson, General Manager of Clear Vision Cable TV, Inc., "Falcon has lost 95% of their subscribers in areas where Clear Vision now provides service." The success for Clear Vision means that they now serve over 5,500 homes over a hybrid fiber coaxial cable network which is also providing direct data links for offices with high speed data needs. Oliverson went on to say, "We love the data business and we are looking forward to providing Internet access via cable modems." When asked about partnering with a local ISP, Oliverson indicated that he has had conversations with one but asked, "Why form a partnership with some one else? It's not so complicated that we can't do this ourselves."

One of the most interesting entrants in local competition is Time Warner Cable's Full Service Network (FSN). Although the technology is not currently for sale, FSN is the first network in the world to integrate emerging cable, computer and telephone technologies. To date, 4,000 customers have on-demand access to a variety of entertainment, informational and transactional services. Eventually, Time Warner intends to become a single-source provider of traditional cable, high-speed Internet access and telephone service, rolling out its network nationwide to compete with telephone and any other newcomers to the local market.

Overbuilding or modernization of a network is extremely expensive. According to Tammy Lindsay, Vice President of Communications of Time Warner Cable's Full Service Network, "Time Warner plans to spend 5 billion dollars on upgrading 80% of its network by the year 2000." Upon the announcement of the NYNEX and Bell Atlantic merger, company officials mentioned that they will spend 5 billion dollars a year on upgrading their networks. With industry wide investments which may easily reach the hundreds of billions of dollars range, it is no wonder that these companies want to keep as much of what will be a highly competitive local access business for themselves.

NATIONAL TRANSPORT / NETWORK BACK BONE PROVIDERS

There is no question that the Internet as we know it will have to change to meet current and future demands on capacity. But more importantly, it must change to let users take advantage of the high speed cable modems which will soon be in place. The new providers of national and international data transport will be the major long distance networks — AT&T, MCI, Sprint and LDDS WorldCom.

At the NCTA, I could find only one company actively marketing its services to the cable industry. Convergence Systems, Inc. (CSI) has announced a multi-year reseller agreement with GridNet International, and a joint venture partnership with WilTel Data Services, a subsidiary of LDDS WorldCom. According to the company, the agreement brings the cable industry the kind of substantial high bandwidth Internet backbone needed to exploit cable's competitive advantage in providing high-capacity Internet access. CSI was instrumental in bringing up the first cable-based commercial Internet service in the U.S. and Terry Wright, Chief Technology Officer for CSI, said that the new GridNet service "will help cable operators provide 10Mbs data solutions."

David Ames, Chairman and Chief Executive Officer of CSI, told us, "The GridNet is really the final piece of the puzzle and we couldn't find it any place else." Of course it is only a question of time before AT&T, MCI and the others are able to provide the same 10 Mbps transport capacity and are marketing it to cable operators and any other local access providers desiring service. The net result will be the ability of an individual or company to go online locally and communicate at ultra high speed across a true network of networks. (It is interesting to note that in East Lansing, Michigan, where CSI helped TCI set up cable modem Internet access, customers have fixed IP addresses, allowing them to place a web server in a home or business capable of 10Mbs.)

CONTENT PROVIDERS

Does content drive technology or visa versa? Cable 96 was dominated by content providers. Current program-

mers like ESPN, HBO, Discovery Networks, CNN, MTV and America Online and newcomers on the block such as MSNBC (a joint venture between Microsoft and NBC), @Home and Great American Country, all want to be part of what they see as the medium of the future.

Today these exhibitors are video-based, but the majority have or are planning Internet sites. Of course, digital delivery of information and video will mean even more room for new entrants, but the long term outlook will not be much different from that of today's crowded media markets. To help sift through what will be a plethora of new services, there were plenty of navigation devices; they will become essential to help consumers find the content they desire. The bottom line is if you have content which consumers are interested in, you'll be able to sell advertising, subscriptions and products.

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EDUCATION LINK

by Rea Andrew Redd

IN SEARCH OF THE VIRTUAL HIGH SCHOOL

Rea Andrew Redd lives and works in southwestern Pennsylvania where he manages a high school library, teaches European history and Scholastic Achievement Test preparation. On occasion, he reenacts American Civil War battles with the Ninth Pennsylvania Reserves, an historic, military impression unit. E-mail Rea at: redd@genesis.duq.edu

OnLine Educational Services, contracted by Laurel Springs School, a private school in Ojai, California, provides computer-based distance learning to K-12 students. John E. Gavlik, Director of OnLine Educational Services, has set forth the curriculum, costs, educational philosophies and the day-to-day practicalities; if you have been following in my quest for the virtual high school, as well as the virtual university, then visit **http://laurelsprings.com** and **http://www.learnonline.com**

Gavil welcomes all queries through e-mail (CompuServe, **74514,21242**; Prodigy, **BYPD12A**; AOL, **JGavlik**) and voice calls **(805)985-1995**.

FIGURES FOR THOUGHT

The Tenth Planet Teacher & Technology Survey (**http://www.tenthplanet.com**) informs us that:

- 94% of all teachers feel that computers are powerful motivators for teaching and learning
- 76% of all teachers have at least one computer in their classroom
- 87% of all teachers describe their level of expertise as comfortable or beginning
- 6% of all teachers have Internet access from the classroom
- 14% of all teachers have Internet access from home

Jennifer Braun has specific figures for the states of California, Florida, New York, and Texas; voice call her at **(916)683-4689** or **mailto:info@tenthplanet.com**.

Electronic Learning also reports that the National Information Infrastructure Advisor Committee (NIIAC) paid an accounting firm to calculate how much it would cost to connect every school building in the U. S. Here's what every school would get; a district server and Local Area Network, one school server; printers, scanners, software, teacher training and support set forth in four scenarios. Keep in mind that today, U. S. schools spend an average of 1.3% of their aggregate budgets each year on technology.

The Lab Model: one computer lab per building with 25 multimedia computers, 10 telephone lines, an Ethernet LAN; cost **$11 billion** (1.5% of aggregate school spending through year 2000)

The Lab+ Model: all the Lab Model and a multimedia computer with modem for each teacher; cost of **$22 billion** (3% of aggregate school spending through year 2000)

Partial Classroom Model: Both of the above and a 5:1 student:computer ratio in half of the classrooms of every school building, a T-1 line for the building; cost **$29 billion** (3.4% of aggregate school spending through year 2000)

The Classroom Model: A 5:1 student:computer ratio in every classroom and a T-1 line for the building; cost **$47 billion** through the year 2005 (3.9% of aggregate school spending through the year 2005)

THE K-12 BROWSER

ConnecTEN

The state of Tennessee wants to connect all K-12 schools to the Internet as soon as possible; to hasten this achievement the state education department has allocated **$10 million** in a public/private sector effort. Bell South, Martin Marietta and several other Tennessee corporate donors will contribute up to 50% of this figure. Teacher training is expected to take a considerable portion of these funds, probably equal to the cost of ISDN lines, hardware and software purchased.

The first wave of over 200 teams of local educators will receive technology and curriculum training; these teams will return to their schools and act as trainers to their peers. The state department of education is posting lesson plans and updates to FAQs at their Web site (**http://www.state.tn.us**).

All 95 counties will have access to ConnecTEN provided by Bell South, which has waived the cost of installing the ISDN lines. Netscape, Inc. of Mountain View, CA will make its WWW Navigator browser available without charge. Surfwatch Software will be used to set up an education screen on the Internet. Contact ConnecTen, attention Jackie Shrago, Tennessee Department of Education at **(615)532-1229** or **mailto:jshrago@tbr.state.tn.us**.

Certified Netware Administrator Program

Novell has initiated a curriculum with the aid of South-Western Publishing Company that, if a student completes it, will certify them to become a network administrator and installation/configuration technician. This career path will probably lead to employment in a school district later, maybe in Tennessee (see above), as a tech support person. Teacher training

for this new curriculum will include the CNA exam and the Novell exam for installation and configuration specialist.

To get Novell's angle on this program call Gary Clark at **(801)222-2409**; to get South-Western Publishing's materials call **(513)271-8811**.

Public School/Home Connected

Indiana is putting computers in over 6,000 homes with their Buddy System Project. The families of fourth, fifth and sixth graders for the past eight years have received a Macintosh or a PC. Hoping to overcome the "digital divide" between well-off and economically challenged families, the Corporation for Educational Technology (CET) administers the Buddy Program.

Indiana School Districts receive $900 per family, and approximately $200 in matching funds must be provided by the school district. In 1995, the Indiana legislature approved $6 million to fund CET's Buddy System through 1996. With these and private sector funds, 4,000 more Indiana families should have Macs and PCs in the living room with a TV.

In Anderson, Indiana, the school district received $3.7 million from the federal government to become a state-of-the-(ever changing)-art multimedia educational laboratory with the help of CET's Buddy System. For more info on the Buddy System, either as an Indiana resident or as a resident of another state wishing your state could duplicate this admirable effort, call Alan Hill, president of CET at **(317)231-6525**.

Fine Arts and World History

The American Library Color Slide Company has placed its catalog on the WWW; call **(800)633-3307**, go to **http://www.artslides.com** or **mailto:info@artslides.com** for a free catalog. Individual slides and curriculum sets are available from Abstract Art and the Acropolis to Warhol to Zaire. These Ektachrome 35mm transparencies in cardboard mounts are **$2.50** each and are of excellent quality.

CNN/Turner Connections

CNN's homepage (**http://cnn.com**) has an instant current events research component that focuses on current news stories and their backgrounds, related graphics, and QuickTime newsreels. The CNN Newsroom Daily Classroom Guide library at **http://www.nmis.org/News InteractiveCNN/Newsroom/con tents.html** summarizes previous lesson plans from the past several years.

THE COLLEGIATE BROWSER

Keyboard MBAs

The Rutgers Accounting Web (**http://www.rutgers.edu/Account ing/raw.html**) has links to the U. K. and Australia.

Ohio State University's Fisher College of Business (**http://www.cob.ohiostate.edu/dept/fin.html**) strengths include a $10 million investment fund for management and links to The Journal of Finance and E-Finance.

The Cox School of Business at Southern Methodist University (**http://www.cox.smu.edu/departments.html**) has an honors course on electronic commerce, including the Internet.

The Manchester School of Management (**SOM_Econ_G/msindex.html**) has a variety of links, including the NetEc Working Paper Archives which are downloadable and free.

A final electronic matriculation to Harvard (**http://rigel.hbs.harvard.edu/**) provides an opportunity to take an electronic course entitled "Designing, Managing and Improving Operations."

COMING YOUR WAY THIS SUMMER

Carnegie Mellon University, Pittsburgh, PA will host the eleventh annual conference on Computing and Philosophy on August 8-18; for info go to **http://www.lcl.cmu.edu/CAAE/CAP/CAP page.html**

Sonoma State University, Rohnert Park, CA will host the Syllabus Conference on Technology and Pedagogy on July 20-24; for info go to **http://syllabus.com** or **mailto:Syll96@syllabus.com**. Syllabus also publishes a monthly magazine for educators. For sample issues, call **(408)746-2000**, fax **(408)746-2711**, or **mailto:info@syllabus.com**.

The University of Wisconsin at Madison will host the 12th Annual Distance Learning and Teaching Conference, August 7-9; contact Nancy Kolberg at **(608)265-4159** or **mailto:Nkolberg @soemadison.wisc.edu**.

The Teachers International Exchange (TIE) will sponsor the 4th International Conference on Educational Technology in the U. S. and Japan; held in Honolulu, Hawaii, August 5-11, this conference will focus on the Internet and transferable-between-cultures ped-

agogy techniques. Call **(415)325-4119** or **mailto:2077.2166@compuserve.com**.

FROM THE DEEP POCKETS DEPARTMENT

The Arts, Culture and Technology Initiative (ACTI) is looking for K-12 schools which wish to share in a $10+ million grant from the Annenberg Foundation. Participating schools must match the amount of the funds received from ACTI and have an acceptable plan for the expansion of electronic technology in their arts curriculum that must be integrated throughout the curriculum. The five-year grants will be to schools and districts using multiple media and the arts to pursue learning on the logical and intuitive levels. Submit proposals by April, 1997. For more info send fatmail to Sue Beauregard, Galef Foundation, 11050 Santa Monica Boulevard, Third Floor, Los Angeles, CA 90025 or **mailto:sue@galef.com**.

Technology 21 (T21) has announced its initial funding effort of the networking of schools in Chicago, New York, Pittsburgh, and San Francisco. An online network and desktop video-teleconferencing community among these four cities is the goal. T21 is looking for twenty districts in each city to take advantage of a public/private sector partnership that includes Viacom, NYNEX, Silicon Graphics Corporation, the New York Institute of Technology and Howard University. Call the New York Institute of Technology **(516)686-7650** to be put on the newsletter mailing list for application procedures and deadlines.

The National Association for the Exchange of Industrial Resources (NAEIR) is offering grants for software, hardware, peripherals, and office equipment to schools and nonprofit corporations. NAEIR donates nearly $80 million worth of items per year. NAEIR's membership fee is $645 annually but each member receives an average of $9,000 worth of goods in a year. For info, call **(800)562-0955** or **mailto:member.naeir@misslink.com**.

American Gateway, Limited (AGL) is sponsoring the Community Solution for Education (CSE). CSE offers Parent/Teacher Organizations a 40% commission on advertisements they sell in AGL's Electronic Yellow Pages. For additional info send fatmail to American Gateway, Ltd., 6930 South Highland Drive, Mail Stop 2-38, Salt Lake City, UT 84121, call **(801)296-5401**, fax **(801)269-8278**, or **mailto:twebb@american-gateway.com**. ◆

THE RACE
TO CATCH THE LEADERS

by A. David Silver

A. David Silver is the Managing Director of Santa Fe Capital Group, Inc., an investment banking firm, and the author of Quantum Companies II, Peterson's Publishing, Inc., which describes the sixty-three fastest growing Internet companies in the U.S. Contact David at (505) 983-1769 or mailto:adsfin@ix.netcom.com

When twenty-four year old Sky Dayton launched *EarthLink Network*, an Internet Service Provider ("ISP") two years ago, he cut a deal with Netscape to buy browsers at a sharp discount and give them away to his customers. Before starting the Pasadena, CA based ISP, Dayton was a systems architect for the entertainment advertising industry. He also co-owned the popular Café Mocha coffee house on Melrose Avenue in Los Angeles. Through his ISP, he leverages relationships with top-tier distribution and media companies such as Speigal, CNN and Columbia Tri-Star to distribute millions of copies of his Internet access software to potential customers. "In this manner, EarthLink's customer acquisition cost is much lower than our competition." Dayton also says his costs are driven down by referrals, "More customers come to us because they were referred by a friend than any other channel." It is estimated that EarthLink's customer

Sky Dayton's Earthlink going public

acquisition cost is about **$25**, which compares favorably with America Online's **$93** and CompuServe's estimated **$48** cost.

EarthLink started as a regional Southern California ISP. Soon after, Dayton created a unique relationship with Netscape, and decided to take the company national. Unlike its competitors, EarthLink opted not to build its own backbone and instead, partnered with *UUNET Technologies* of Fairfax, Virginia. "By not having to build the backbone ourselves, we are free to concentrate on the most important aspect of our business, building a relationship with our customers," says Dayton. EarthLink had over 100,000 customers in mid-May, is adding over 6,000 per week and announced on June 5 that it is going public with 23% of the company's stock - 3.6 million shares will be offered at **$10** to **$12** per share, implying a valuation of $156 to $188 million.

The 10 Largest U.S. ISPs (Mid

The leader board in the ISP industry currently looks like this:

Name	Dial-up Subscribers	New Sign-Ups/Week
Netcom	415,000	5,765
Spry Net (a)	154,000	6,000
PSINet	130,000 (c)	1,000
Global Network Nav (b)	120,000	4,000
Concentric	115,000	7,000
EarthLink	110,000	5,700
IDT Corp.	95,000	4,500
Internet America	29,000	2,000
TIAC	26,000	800
MindSpring	25,000	1,500

(a) Subsidiary of CompuServe (b) Subsidiary of America Online (c) Does not include approximately 12,000 valuabl

Another ISP that became a national contender quickly is **Concentric Network Corp.** (CNC), which began in Bay City, Michigan, by persuading a national shoe store chain with over 214 locations to permit CNC to colocate CNC's T-1s, routers and other equipment in the chains closets in the U.S. and Canada. The venture capital fund, Kleiner Perkins Caulfield & Byers, discovered CNC, and with Goldman Sachs & Co. loaned $10 million and moved Concentric to Cupertino, CA. A new CEO, Henry R. Nothauft, formerly President of David Systems, Inc., was installed. Then Kleiner Perkins raised $25 million for Concentric in a private placement that valued the embryonic CNC at $120 million. More than 20 small venture capital funds bought in at what would be considered an IPO-like valuation. Even the Pritzker family took a small piece of the deal.

Today, Concentric is one of the fastest growing ISPs in the country with an estimated 95,000 subscribers. Concentric allies its service with companies such as Intuit, which has sold 10 million copies of Quicken. Concentric offers new subscribers a customized Netscape browser to get to Intuit's financial information only on Concentric's network. The plan is working. Concentric is probably the fastest growing ISP in the country.

Isn't **AT&T Worldnet** supposed to dominate this market? Most of the nation's 2,400 ISPs have 1,000 or fewer subscribers and when AT&T notifies its 90 million subscribers that they can come onto its WorldNet Internet service for a free trial, the small players will lose too many subscribers to spread the remaining cash flow over their overheads. Merger mania will strike the providers, with well-funded companies vacuuming up the better ones for the cost of their equipment plus perhaps $50 per dial-up subscriber.

The playing field will be leveled when the smaller contenders achieve IPOs and have the currency of publicly-traded stock to use in acquisitions. Moreover, there is more to the ISP business than numbers of subscribers. "Customer service is the heart and soul of the ISP business," says Brenton Young, Vice President of Strategic Planning at EarthLink. "A customer who waits 10 minutes to get connected or to hear a friendly voice when he calls the helpline will soon be a non-customer."

The CEOs of the leading ISPs do not fear the bigfoot announcements of AT&T, US West or Bell Atlantic with their plans to compete in the provider business. Of the $20 per month that most subscribers pay their ISPs, $1.00 goes to the telephone company, about $6.00 goes to customer service, another $5.00 goes to equipment amortization or lease payments and the balance goes to operating expenses and profit. AT&T has hired Teletec Corp., Sherman Oaks, CA, a large, inbound telemarketing company, to handle its customer service calls.

"What do they know about modem speeds and how to design a Web page?" asks Robert J. Maynard, Jr., CEO of **Internet America**, the largest ISP in Dallas/Ft. Worth and seventh largest nationally. "If AT&T comes into Dallas, they will enhance awareness of the Internet, take some subscribers from AOL and CompuServe, and be another competitor that we sell against."

Maynard wrote the book on Internet marketing. He has splashed billboards all over Dallas with the brazen announcement: "Dial 1-800-Be A Geek!" Internet America could become the next ISP to achieve a public market for its stock. ◆

May,) 1996

Voice Phone	Home Page	Mthly $/Hrs./$ per addtl. Hr
(408)983-5950	http://www.netcom.com	$19.95/ul/na
(206)957-6000	http://www.sprynet.com	$19.95/ul/na
(703)904-4100	http://www.psi.net	$9/9/$1.50
(703)918-1802	http://www.gnn.com	$14.95/20/$1.95
(517)895-0500	http://www.cris.com	$19.95/ul/na
(818)296-2400	http://www.earthlink.net	$19.95/ul/na
(201)928-1000	http://www.idt.net	$15.95/ul/na
(214)-861-2999	http://www.airmail.net	$19.95/ul/na
(617) 276-7200	http://www.tiac.net	$29/100/na
(404)815-0082	http://www.mindspring.com	$19.95/ul/na

commercial account

MANNING THE WIRES
by Ric Manning

PLUGGING IN FROM PARADISE

Ric Manning writes about business technology, computers and consumer electronics for *The Courier-Journal* in Louisville, Ky. His weekly column called *Home Tech* is distributed to more than 80 newspapers by the Gannett News Service and it's available on the World Wide Web **http://iglou .com/gizweb**

Ric was the founding editor of *Plumb* and *Bulletin Board Systems*, two newsletters that covered the BBS arena in the early 1980s. His freelance work has appeared in several magazines including *PC/ Computing*, *Mobile Office*, *PC Week* and *Home Office Computing*. Ric lives in Southern Indiana with his wife, two children and a champion Weimaraner. Write to Ric at **mailto:ricman @iglou.com**

You need to spend only a couple of days on the tiny out-islands of the Bahamas to learn that the rest of the world gets along quite well without your attention.

Want to check your voice mail from Great Guana Cay?

"Sorry, mon," says the bartender at the island's only restaurant. "Only one phone on the island. And they shut it off at noon."

Miss your favorite programs on National Public Radio? Tough break. The nearest FM radio station is 100 miles away at Freeport, well out of range.

Newspapers? Don't bother asking for one at the Sea Spray Marina on Elbow Cay. The woman who runs the marina restaurant says the only papers they see are the occasional *Miami Herald* or *New York Times* left by the folks on the yachts and sailboats.

"And most of them are week old," she said.

And if you're booked for a week at the Harbour Inn in Hope Town, you might as well forget about surfing the Net or even checking your e-mail. Even if you could plug into a phone line, which isn't very likely, the rates would kill you.

The preferred medium for communication among the islands and their residents is VHF radio. It works like Citizens Band radio, but with less clutter on the channels and a much wider range.

People have the radios on their boats, in their cars and in their homes. The restaurants and marinas monitor the hailing channel to take requests and dinner reservations.

Of course, that's why people go to the islands — to get away from their phones and pagers and fax machines and e-mail. But life in the Caribbean may not be so bucolic much longer. The Information Highway is slowly spreading into the Caribbean.

TECHNOLOGY HITS THE ISLANDS

The latest technology to hit Elbow Cay and the other islands is direct-broadcast satellite television. These days the folks in the big houses down near Tahiti Beach can have their morning coffee with Harry and Paula and Bryant and Katie. Up in Hope Town, the evening crowd at Captain Jack's don't throw darts so much anymore now that they can watch Michael Jordan and Shaquille O'Neal on the television behind the bar.

The pizza-sized dishes with RCA and GE logos on them are sprouting like mangroves on the remote Bahamian islands where tourists used to come to take a break from CNN and "Wall Street Week." Last December, a consortium called Galaxy Latin America put a $150 million satellite into orbit to deliver programs via DirecTV to customers in Mexico, Central and South America and the Caribbean.

The company plans to sign up at least 5 million of the 75 million TV-equipped households in those areas. In addition to American-based channels, the new service has 72 channels in Spanish and 72 in Portuguese, as well as 60 music channels.

And the Internet won't be far behind. Microsoft recently announced a partnership with DirecTV. The two companies are cooking up ways to transmit TV channels and material from the World Wide Web directly to PCs — including those that are beyond the reach of telephone and cable TV networks.

CARIBBEAN WEB SITES

Meanwhile, only a few organizations based in the Caribbean have been able to set up a Web site directly on the Internet. Late last year, *Bahamas Ministry of Tourism* opened a site (http://www.interknowledge.com/bahamas) that promotes the islands' history, culture and tourist attractions.

Bahamas On-Line (http://www.bahamas.net.bs) is a bit more commercial, with listings of shops and services and places to stay. The site is also home to the *Bahamas Investment Authority*, which offers information about licensing, permits and other requirements for people who want to do business in the islands.

Bahamas Online (http://TheBahamas.com) is another interesting cyberstop for tourists. The site contains links to businesses offering accommodations, recreation and shopping. You can also check out a calendar of events.

Most Web entrepreneurs who represent Bahamian businesses do it from sites based on the U.S. mainland. Robert Meister, who lives in Florida, manages a Web site for *the Treasure Cay Resort and Hotel* (http://treasurecay.com).

"We're getting pretty good responses from it," said Meister. "People are definitely surfing the Web looking for vacation destinations, and resorts are very well suited for this kind of advertising, especially if you're located in places like the Caribbean."

Small operations like the Treasure Cay resort "don't have the advertising budgets that the big hotels in Nassau and Freeport have and this is a very effective way for people to find you," he said.

Karen Legere, owner of *Abaco Vacation Reservations* (http://www.acadia.net/abaco) publishes a brochure that lists more than 65 homes, condos and villas for rent in the Abaco islands. She said she uses her Web page to get bring in leads.

Legere said the Web site brings in enough business and inquiries to support the cost of advertising. "It's a new medium," she said. "I believe it's definitely going to be going places, but it may take a while."

She said an e-mail link to her clients in the islands would be more useful than the conventional fax connection, but that's not likely to happen soon, she said.

"I don't think people there understand the information highway and I don't think they see the need to have it," she said.
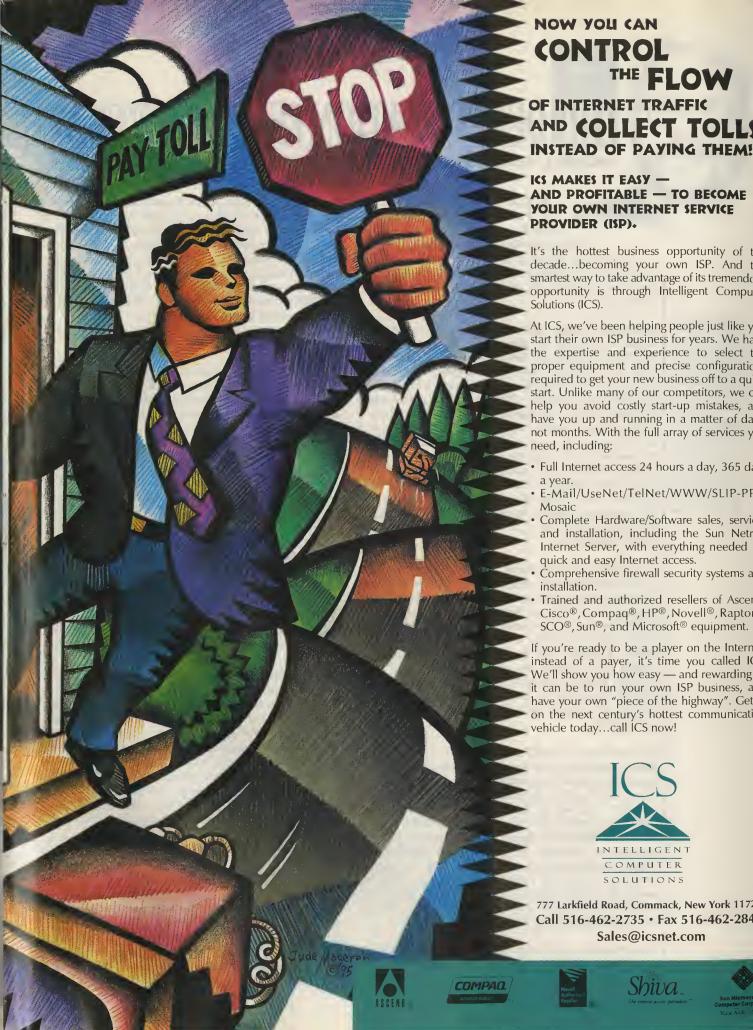
Florida-based *Vacation Break U.S.A.* recently opened a site on the Web (http://www.vacationbreak.com) to distribute details on discount travel packages and vacation ownership opportunities in South Florida, Orlando and the Bahamas. The site features Shockwave technology, audio and animated graphics.

Royal Caribbean Cruise Line is also online with a Web site (http://www.royalcaribbean.com) that has more than 400 pages of graphics, itineraries, cruise prices and a "virtual cruise" game.

In the Wired World, it's hard to escape commercialism, even in paradise. You may not find a McDonald's or a Pizza Hut in Marsh Harbour, but the satellites are raining plenty of Big Mac commercials.

"I liked it better in the early 1980s when there was no TV," said Meister. "But I guess you can't stop progress."

Of course, you need electricity to keep "Nick at Night" or The Spot flowing. And on Green Turtle Cay, Lynyard Cay or Tilloo Cay that can sometimes be a problem. A little rain, a freh wind and late in the evening, the lights might blink and the power can fail. It's times like those — when you would light a kerosene lamp and pick up a paperback novel — that you might even think you were on some remote Caribbean island.◆

THE DEREGULATION FEEDING FRENZY

PACBELL READIES INTERNET SERVICES

by Bill Gram-Reefer

Bill Gram-Reefer, based in Concord, CA, is president of WORLDVIEW, specializing in connectivity and communications. His Online Services column appears monthly in *MicroTimes*. His amateurish web page can be accessed at http://world view-bbs.com. E-mail Bill at reefer@world view-bbs.com

Now that the PacTel/SBC merger has been overshadowed by an even bigger merger in the Nynex/Bell-Atlantic tango, it may be safe to put your boogie boards back into the water as the corporate sharks move on to the summer feeding grounds of the 1996 Telecommunications Act.

Meanwhile, Pacific Bell (http://www.pbi.net) continues to leverage its presence in the Golden State. PacBell's 15 million+ lines represent about 77 percent of the phone lines in California's $6 billion phone market. Twenty percent of all new lines installed are PacBell's. GTE, also a Local Exchange Carrier (LEC) in California, comes in second with 4 million lines; together they represent 98 percent of all the telephone lines in the Golden State. At least 20 smaller LECs scramble for the other two percent of the infrastructure. And that's even before cable-TV giant Tele-Communication Inc.'s launch of local telco service in San Francisco's East Bay suburbs in the fall. More importantly, according to Pacific Bell, more than one third of all U.S. Internet traffic begins or ends in California.

Pacific Bell just announced the launch of its Internet Service with two new offerings. Both will be 14.4- and 28.8-Kbps access. Each has a ceiling of **$19.95** per month. The California Advantage Plan (CAP) costs **$14.95** per month including 20 hours and **$0.50** for each additional hour to a monthly maximum of $19.95. PacBell's standard plan costs just **$9.95** per month for 10 hours use with each additional hour costing **$1.00**, also with a monthly maximum of $19.95. According to PacBell research, over 75 percent of online users spend more than 9 hours online each month.

In contrast, AT&T's WorldNet "free" plan (http://www.att.com/worldnet/wis) offers 5 free hours plus **$2.50** per additional hour. Surfers who choose the PacBell standard plan could use 20 hours a month and pay **$14.95** compared to **$19.95** for AT&T's unlimited use plan; **$37.50** for AT&T's "free" plan; and **$47.45** for the pleasure of waiting as AOL updates its artwork. In comparing WorldNet and PacBell's offering, it appears to be a wash for "power users" as each plan provides effectively unlimited usage for $19.95. However, PacBell's standard plan allows middling users (under 30 hours per month) the opportunity for significant savings.

The IP service, which has been well received by beta users, will provide e-mail and web browsing via a customized version of Netscape Navigator 2.0 and will feature Yahoo Internet search capabilities. The browser will first appear for Windows-based PCs with a Macintosh version to follow. Rollout will include the San Francisco Bay Area, Los Angeles and Orange County, Greater San Diego and Sacramento with less populated markets to come online during the 3rd Quarter. Also in the 3Q, subscribers will be able to publish their own home pages.

ISDN PRICING

On the ISDN front, the California Public Utilities Commission (CPUC) (http://www.cpuc.ca.gov) on March 13 put a lid on PacBell's request to practically double its charges for residential ISDN service. The proposed rate increase would have raised both the daytime access per-minute charges as well as begin charging 2 cents per minute for evening, nighttime and weekend hours after 20 hours of monthly usage.

Instead, the CPUC suggested an increase of about $8 to the flat-rate monthly fee, a relief to many and maybe a workable solution. Tom Bayless, director of Switched Digital Services for Pacific Bell noted that the "amended proposal will enable [Pacific Bell] to provide the service at a monthly rate that is still among the lowest in the nation, and with usage charges that are among the most reasonable in the U.S. It also reflects the concerns we've heard that raising the per-minute charges would have a significant impact on our heavy ISDN users."

The PUC hearing process won't be final until well into Fall 1996 (if then), but expect eventual home ISDN access to run about **$33**/month plus daytime usage charges of 3 cents for the first minute and one cent per minute during weekday business hours, leaving evening, nighttime and weekend usage still a part of the flat rate. But until the final approval, PacBell's current rates remain in effect at around **$25** per month flat rate plus the existing 3-1/2 cent charges per minute for weekday usage. A **$125** one-time installation charge will be waived if you agree to keep the service for two years.

James Love, director of a non-profit affiliated with Green Party Presidential candidate Ralph Nader, believes that "ISDN customers are getting creamed. By keeping prices so high for digital service, we are killing off a whole generation of new services that depend on a high-speed platform." ISDN pricing is something of an ongoing battle even as industry giants like Intel and AT&T lobby for ISDN rates of

$30 to $35 a month. "Until they (telcos) wake up to the reality that this is *not* a high-end premium service, but rather a new form of plain old telephone service, it won't be priced appropriately," said Tad Hetu, the director of strategic alliances at Intel.

The critical question is how much does ISDN service really cost? U.S. West (`http://uswest.com/isdn/index.html`) is asking over $180 per month but is "willing" to drop that rate to around $75. Other telcos including Ameritech (`http://www.ameritech.com/products/data/ahpp/`) offer near unlimited service for less than $40 a month while the Northern Arkansas Telephone Company (`http://southshore.k12.ar.us/natco1.html`), an independent phone company serving 6,400 subscribers, offers unlimited service at under $18 a month for residential Basic Rate ISDN and $28.15 for businesses.

RBOC OFFERS BOUNTY FOR ISDN REFERRALS

Sysops and smaller ISPs who are looking to upsize their cash flow may consider Bell Atlantic's (`http::// www.bell-atl.com/isdn/consumer`) ingenuous referral program designed to promote use of ISDN by its residential customers who use the Internet. Under the program, Internet service providers and online service providers will receive $15 for each residential customer they refer to Bell Atlantic who signs up for the high-speed digital telephone service.

OTHER NEWS

BellSouth and *MCI* have agreed to share their connections allowing MCI to sell local service and BellSouth to get into the long-line business. The agreement covers the interconnection of local networks in Florida, Georgia, Tennessee, Alabama, and North Carolina with more to follow.

AT&T announced it will offer local telephone service in Virginia (telco service there formerly owned and operated by *Bell Atlantic*). AT&T expects certification by July. In addition to local telco and long-distance, AT&T services will include wireless communications, online computer service, and satellite television.

Effective May 21, *AT&T* says it will offer 5-cent per minute long distance rates to users in Connecticut for up to 1,500 minutes per month of in-state direct call dialing. The rate will be good for an entire 12 months.

In order to compete with *TCI* in the San Jose and San Diego markets, *PacBell* has put the kibosh on its fiber-optic cable backbone installation in Orange County, California and 70,000 homes in Los Angeles. Pacific Bell cited equipment shortages and market factors for the delay. Instead, Anaheim will get PacBell's wireless TV service slated for 1997.

Here we go! The Justice Department's Antitrust Division is cajoling the FCC to create rules concerning access to local telephone company networks and to ensure competitors are charged reasonable prices. The Telco Act requires local telcos make their services available to new competitors. Recommendations include: establish basic rules for market entry; ensure entrants have access to all feasible points of interconnections with local networks; ensure access is reasonably priced; avoid unnecessary restrictions; and work with states to quickly adopt universal service in each market.◆

Kevin & Kell home page: http://www.compuserve.com/kkhome.html

PUTTING THE NET TO WORK
by Durant Imboden

CHRISTIANITY ON THE WEB

Durant Imboden is a freelance writer who manages the Writing forum in the Arts & Entertainment category of The Microsoft Network. His credentials include published novels, articles, and short stories; fiction editing and staff writing for *Playboy*; representing authors at a New York literary agency; and freelance copywriting for Lotus, Apple, Northwest Airlines, US West, and other national advertising accounts. When not typing, Durant is a volunteer announcer at local, state, and sectional figure-skating competitions. **Mailto: Durant_Imboden_ MSN** on The Microsoft Network or **writing @msn.com** on the Internet. The author is not an employee or spokesman for Microsoft.

Years ago, when Taiwan still had oxcarts and Chiang Kai-Shek dreamed of invading the Chinese mainland, I spent my junior year of high school at Morrison Academy, a missionary boarding school in the city of Taichung. My classmates' parents marketed the Gospel to Taiwan's populace through sermons and good works while their spiritual kinfolk back home distributed religious tracts on street corners. The churches that sponsored them — Baptist, Pentacostal, and other fundamentalist denominations — spent less money on telecommunications than on mimeograph machines.

How times have changed! Today, even a Two-Seed-in-the-Spirit Predestinarian Baptist missionary outpost in Tanzania may have its own Web page. And instead of merely exhorting the faithful to place their hands on their radios and feel the healing power of prayer, the *Abundant Life Prayer Group* now uses an e-form at **http://www.oru.edu/ ministries/oralrich/abun dant.html** to accept prayer requests. Heaven has moved from a place in the clouds to a node on a TCP/IP network.

I recently put my own religious skepticism on hold and toured denominational Web sites out of nostalgia and a need to write a column this month. The trip proved far livelier than the typical Sunday sermons of my youth. Best of all, I never felt obligated to toss money into a collection plate, since there were no vergers or fellow parishioners to witness my penny-pinching ways.

My first stop was Christianity's oldest and most successful incarnation: the Roman Catholic Church. The *Vatican* Site at **http://www.vati can.va** was a disappointment, since it was closed for renovation.

Catholic Online Internet Services maintains the Catholic Online Web site at **http://www.catholic .org**. This Internet service provider offers Internet access and Web hosting along with a collection of links to other Catholic locations on the Web. One of

its own pages, Our Lady of Lourdes (**http://www .catholic.org/mary/lourdes1.html**), is a nicely written account of St. Bernadette, her miracles, and her incorrupt body's exhumation in 1909.

The Radical Catholic Page at **http://www .bway.net/~halsall/radcath.html** takes a different approach, eschewing saints' biographies and miracles in favor of a "Jesus Christ — Liberator" philosophy. Paul Halsall, who maintains the page, has done a superb job of collecting links and essays on everything from "The History on Women in the Priesthood" to a "Calendar of Lesbian, Gay, Bisexual, and Transgendered Saints."

The Abundant Life Prayer Tower

Prayer Requests Accepted Via the Web

On a more practical note, the *100% Catholic* page at **http: //www.sunflower.org /~catholic** invites the faithful to "boldly proclaim your faith and allegiance to our Church and our Pope" with T-shirts, sweatshirts, bumper stickers, tote bags, and a hand-appliqued "guardian angel baby bib." Despite the rampant commercialism of the site, its featured graphic is quite attractive - although it might look better on the wall of a chapel than beneath a layer of Beech-Nut Baby Food.

Handsome graphics are also featured at the *First Church of Cyberspace*, which has an online gallery and links to religious art on the Web. This ambitious site is "building a church for the new millennium now" at **http://execpc .com/~chender**. The First Church of Cyberspace hosts a service every Sunday evening via Internet Relay Chat, and it will soon offer a "Java theology page" — which may be why the church claims to be "turning even the shadow of death into bright morning Sun [capitalization mine]." RealAudio is a nice extra touch, though only music excerpts (no sermons) are available.

I felt obligated to visit the *Presbyterian Church (U.S.A.)* at **http://www.ecunet.org**. I should have fought the urge, because this site has all the excitement of an 11 a.m. sermon on Christian social responsibility. Still, its link to a page called *Eculaugh* ("good clean religious humor," **http://www.ecunet.org/ ecunet/eculaugh**) brought back memories of the labored jokes I heard from pulpits in my youth.
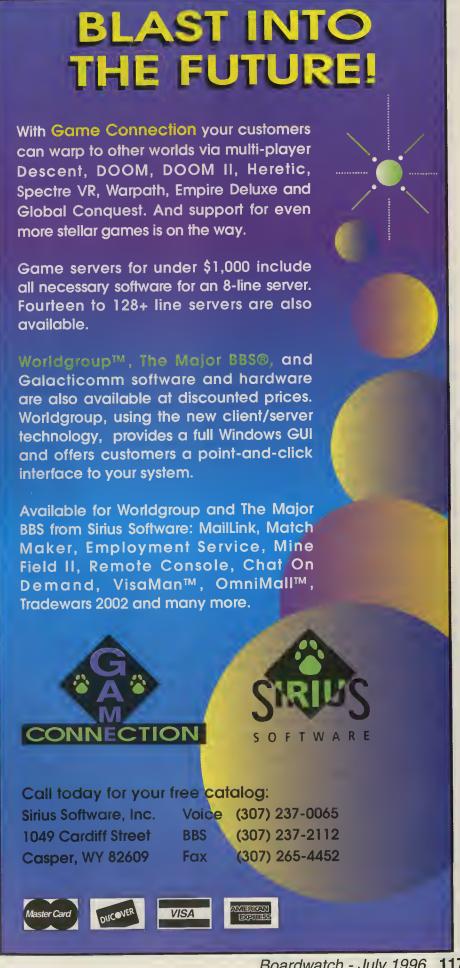
The *United Church of Christ* offers a more palatable assortment of church-related information at **http://www.apk.net/ucc/ucchp.htm**. The UCC traces its roots to the earliest days of the Reformation in England and Europe, and its pages devoted to church history are exceptionally well done. I enjoyed visiting this site (and not only because my mother was raised as a Congregationalist).

History is also featured on the *Unofficial United Methodist Church Homepage* at **http://www.netins.net/showcase/umsource**. When I clicked on the "Charles Wesley Resources" link, I was taken to a collection of classic Methodist hymn lyrics at **ftp://kuyper/cs.pitts.edu/music/hymn_texts/chalres_wesley**.

Methodists have close historical ties to the *Church of England* (John and Charles Wesley were Anglican missionaries), so the next logical stop was *Anglicans Online!* at **http://www.infomatch.com/~haibeck/anglican.htm**. This proved to be a central information hub for the Anglican and Episcopalian religious world, with links to any number of related sites.

To the credit of Webmaster Tod Maffin, Anglicans Online! doesn't just preach the party line. An internal link took me to **http://www.infomatch.com/~haibeck/anglican/righter.htm**, a.k.a. The *Bishop Righter Trial Information Centre*. Here, I read about the church's prosecution of the Rt. Rev. Walter Righter, Assistant Bishop of Newark, New Jersey, who made the mistake of ordaining a gay deacon while the latter was living "in a sexual partnership with another man." I also found links to Anglican and Episcopalian groups that have broken away from the mother church.

Still, my own favorite Anglican site was the Church of England at **http://www.churchnet.org.uk/churchnet/home/church_house**, which explained the C of E's beliefs and sacraments in language that even a low-church Yankee could understand. Its pages on communion, baptism, weddings, and funerals are both informative and well-written, and they show a dedication to customer service that seems appropriate for a state church in which most Britons are members by birth.

At the opposite end of the spectrum from the Anglican church, which is noted for its love of liturgy, is the *Religious Society of Friends*, or Quakers, whose Web site is located at `http://www.quaker.org`. Like the Friends it represents, the Quakers' page is humble and free of adornment, consisting of links to Quaker history pages, writings, meeting houses, service organizations, mailing lists, and a Web developer's page under the alias "Quaker Oats (NOT)."

Britain's Jesus Army Travels by Bus

Baptists represent another group with a bare-bones approach to liturgy. The largest Baptist denomination, the Southern Baptist Convention, doesn't have a Web site; instead, it operates in the more revenue-friendly environs of CompuServe. The *Maverick Southern Baptist Page* serves as an unofficial (and largely sympathetic) surrogate at `http://www.io.com/~tarrytwn/SBC/index.html`.

For a different view of the SBC, visit the *Lazareth Projects* at `http://caladan.chattanooga.net/~lazareth`, which compares the SBC-endorsed "Experiencing God" program with the mind-control efforts practiced by religious cults.

In Minnesota, where I live, Lutheran churches are nearly as popular as boat dealerships and Dairy Queens. Head for the *Kingdom of Heaven* at `http://www.indirect.com/www/thebible/index. html`. This site promises to let visitors explore a VRML "Virtual Hell" in the near future (possibly by the time you read this, if the world hasn't ended by then). In the meantime, you can complete an electronic questionnaire about "the fiery pits of hell" if you're able to find the e-form amid the flaming JPEG background.

"Hell!" may also be your reaction when you visit the *Who is Pastor Peters?* page at `http://ra.nilenet.com/~tmw/pjp.html`. Peter J. Peters, pastor of the LaPorte Church of Christ in LaPorte, Colorado, has written books such as *Whores Galore* and tracts that include *Death Penalty for Homosexuals is Prescribed in the Bible*. His weekly radio broadcasts reach a worldwide audience, thanks to financial support from concerned (and presumably heterosexual) listeners.

The *Church of Jesus Christ of Latter-Day Saints* has endured its own share of controversy over the years, although it no longer discriminates against blacks. (African and African-Americans have been allowed into the priesthood since a revelation in 1978. For details, read Jeff Lindsay's *The Issue of Race FAQ* at `http://www.athenet.net/~jlindsay/LDSFAQ/FQRace.shtml`.)

The Mormon home page at `http://www.lds.org` was under construction at press time, so I checked out Brandon Plewe's *LDS Info on the Internet* page at `http://www.acsu.buffalo.edu/~plewe/lds.html`. Plewe has done a nice job of tapping Mormon resources on the Web, and the church patriarchs in Salt Lake City should consider scrapping their own Web plans and giving their official blessing to Plewe's comprehensive site.

You'll find plenty of Jehovah's Witness pages on the Web if you go looking, however. Most appear to be hostile or critical.

A good example is the *"Facts about Jehovah's Witnesses"* Q&A page at `http://ourworld.compuserve.com/homepages/chris_arndt/facts.htm`. Another is *A TOWER OF DARKNESS?*, `http://www.nano.no/~telemark/Darkness.html`, which purports to reveal subliminal pictures in *Watchtower* literature. (Are *Watchtower's* editors publishing hidden symbols of Zeus? Does anyone really care?)

For a more upbeat church site, try the colorful *Jesus Army* pages at `http://www.tecc.co.uk/jesusa`, which are maintained by the Jesus Fellowship Church in the United Kingdom. Here, you can leaf through the the Modern Jesus Army Streetpaper, learn how Generation X is being replaced by Generation J, and read a "Church was never like this!" feature that describes worship with disco lights and "Holy Spirit drunkenness." The Jesus Army Web site oozes so much enthusiasm, and the members are having such a good time, that I can't help wishing its commanding general had run my missionary school in Taiwan.

Enthusiasm, albeit of a turncoat variety, is also a hallmark of *Jews for Jesus*, an organization that seeks to rescue the souls of its Hebrew brethren before it's too late. Visit `http://www.jews-for-jesus.org` to have your Jewish preconceptions put on trial in the "virtual courtroom" or hear a group known as the Liberated Wailing Wall sing "Jewish Gospel" music. It's enough to make any self-respecting Jew ask, "For this we survived the Holocaust?"

Church of "Bob" Offers Slackers Salvation

The *First Online Church of "Bob"* is a different kettle of gefilte fish. My initial reaction upon visiting `http://www.tiac.net/users/modemac` was to dismiss it as a heavy-handed joke. It's hard to give much credence to a "church of the SubGenius" that talks of an "anti-Slack conspiracy." Still, after perusing what the Webmaster had to say about Islam, Freemasonry, Scientology, and other topics, I became convinced that the site had some value — although I wasn't quite ready to entrust my eternal soul to "Reverend Modemac."

Turning my back on "Bob," I let the spirit seize me and point me toward Digital's Alta Vista search page. With fate or a divine force guiding my hand, I entered the name "Morrison Academy" and was astonished to find that my old missionary school is now on the Web at `http://netcentral.nchu.edu.tw/~edu460/ma/home`. It was like going home again—minus the compulsory Bible readings, the recycled butter on the breakfast toast, and the geckoes that shared my spartan bedroom.

Was I predestined to write this column and discover my missionary alma matter along the way? My old classmates at Morrison could have argued about this for hours during our lunch time theology debates — as, indeed, we could do now, thanks to e-mail and the World Wide Web. (My e-mail address, if any classmates are reading this, is `mail to:writing@msn.com`)◆

WORLDSOCK: PAINLESS SLIP/PPP FOR WORLDGROUP USERS

by David Hakala

Adding SLIP/PPP service to your BBS offerings can be profitable or a nightmare. Many customers require hours of hand-holding to get their Winsock stacks up and running; some give up, costing you revenue. Mailing "self-installing" setup kits is expensive, and users are often leery of the installation process. The ideal Winsock stack would be invisible to users; it would just work when they need it. They wouldn't need to call you, install any software or read any FAQs to start surfing the Internet.

Operators of Galacticomm Worldgroup systems now have the ideal Winsock solution: Murkworks, Inc.'s *Worldsock™ Virtual Winsock for Worldgroup*. Essentially, users never load a Winsock stack at all – they use the stack running on your Worldgroup server. There is no SLIP/PPP connection between the user and your server. While using any Winsock-compliant application to access the Internet, users retain the ability to use all the features of the Worldgroup Manager, including Teleconference, Forums and Electronic Mail. Users can connect to the Worldgroup server via dial-up, telnet or Novell SPX links.

HOW WORLDSOCK WORKS

The Worldsock client package consists of three modules - the main executable **mkwws103.exe**, the 16-bit **winsock.dll** and the 32-bit **wsock32.dll**. The modules are downloaded to the caller's machine the first time he/she logs on; thereafter, the Worldgroup client automatically starts the executable when the caller connects to the server. The user needn't do anything except watch the download meter on the first call.

The executable always loads the 16-bit winsock.dll. If Windows 95 is detected, the 32-bit wsock32.dll is also loaded. Worldsock uses a proprietary *dynamic loading* method to replace any previously loaded winsock.dll with its own flavor. Note that this replacement occurs only in memory, leaving your other winsock configuration intact on disk.

Normal winsocks provide TCP/IP services. Worldsock's winsock.dll "looks" like a standard winsock to client-side applications, as it must to handle API calls and pass data to such applications.

But data is not transmitted using TCP/IP; instead, API requests are placed in a client/server "dynapak" and transmitted to the Worldgroup server for processing.

So where's the TCP/IP stack? On the Worldgroup server. Worldsock supports Galacticomm's *Internet Connectivity Option* (ICO) and *Advanced Internet Option* (AIO), or Vircom's *Major TCP/IP* (v1.86 or later). The Worldsock server communicates with the TCP/IP stack through a software interface.

ONE IP ADDRESS FOR ALL SIMULTANEOUS CALLERS

Worldsock can use only one IP address for many simultaneous callers. It can distinguish callers by assigning each a difference *source port* while using the same *source IP address* for all. Most client software doesn't care what its source port is, so this method works most of the time.

But some user applications also operate in server mode; Internet Phone™ and CU-Seeme are examples. In server mode, such applications request a standard local port; if it's not in use Worldsock will supply it and things proceed without a hitch. But if the standard port is already in use, the server's request will be denied; no inbound calls for you, Jack. To overcome this limitation, Worldsock allows assignment of static or dynamic IP addresses different from the Worldgroup server's IP address.

BILLING & ACCESS CONTROL OPTIONS

Like most things Galactoid, Worldsock pays special attention to making money for its owner. You can charge by the socket opened, by the byte retrieved, and/or by the number of minutes used. You can charge more per minute for access to specified sites.

Access Control Lists can be used to limit the privileges of groups of users and the sites they are allowed to access. For example, adults may be given unrestricted access to everything for 120 minutes per call, while users on a "K12" list might be confined to disney.com and logged off after 30 minutes.

FROM THE USER'S SIDE

I tried Worldsock over a normal 28.8 Kbps dial-up connection, using the requisite Worldgroup Manager client. Worldsock delivers what it promises; I got SLIP/PPP without knowing how. The only thought required of the user is whether he/she wants Worldsock to automatically load upon log-in, never load, or prompt the user to load upon log-in. Anyone who can install the Worldgroup client once can handle Worldsock with no problems.

Setting Worldsock to load automatically gave me instant access to both Worldgroup and Internet services as soon as I logged on. I downloaded files from the Worldgroup server while checking my e-mail back at boardwatch.com. Life couldn't have been simpler! ◆

NET PROFIT

By Phil Becker

STAYING ALIVE —
THE FEAR OF FLYING DISGUISED AS SURFING

Phil Becker lives in Aurora, Colorado where he is President of e**Soft**, Inc. and Secretary/Treasurer of **One, Inc.** He sits on the board of **Durand Communications** and is very active in and excited by computer communications of all types. In such spare time as he has, Phil enjoys attending his favorite sports which are NHL Hockey and IndyCar and NASCAR auto racing. You may reach Phil via email at **phil@plb.com**

I sometimes think I spend as much time trying to keep perspective on what's going on as I do on everything else combined. I recently returned from a seven day driving tour of the Western United States. I recommend this type of total break from normal routine to everyone. The first day or two, when you are in a mountain canyon lying beside a river swollen with whitewater run-off with no one as far as the eye can see, you know why you need to do this.

When you first enter tranquillity and awesome beauty of this scale, it feels unsettling that you aren't answering the phone, running to a meeting, or desperately trying to get something done by a deadline so you don't "blow the deal." It feels vaguely like you're cheating. But by the end of the trip that anxiety has faded and you can sleep the entire night through, waking up relaxed. Then when you return and suddenly realize the pace at which you normally live, you can clearly see that it isn't really normal but something you've chosen to do in order to play the game.

THE INTERNET SHOCKWAVE

I returned from my trip just in time for Internet World, where there was no perspective at all. Just people bleeding from the eyeballs to find something that would work or a niche they could play in. There were new products and features everywhere with more "techno-flash" than has been seen for some time. But very few of the vendors seemed to have a clue how someone would really use them other than just to be cool! They did sort of frantically wonder if anyone at their booths knew, and seemed to hope they would. The "Internet Shockwave" had hit everyone there, and the disorientation from it was clear to see.

By now, nearly everyone has felt the shockwave; those who haven't soon will. You know the shockwave has hit when you wake up with a feeling that somehow you have been suddenly flanked, and that what you got up to do is no longer as relevant as it should be. Then comes the anxious feeling that if you don't change direction you'll become irrelevant and watch the rest of the world pass you by — right when there is more opportunity and when more people are going to win big than ever! The result is frequently frantic motion, coupled with a feeling of disorientation and panic.

THE REACTION

The popular wisdom is that you must learn to "surf" the Internet to survive. The surfing metaphor embodies the perception that the computer world is moving in response to forces far beyond your control, but that if you learn how to watch for large trend waves and "paddle out" to wait for them, you can "catch the wave" and ride it back to shore. This isn't a bad metaphor for how people who have been hit by the Internet Shockwave, but the truth is that even the best surfers don't spend much time "in the tube" before being beached or bashed by the waves and nearly drowned.

> *"Even the best surfers don't spend much time 'in the tube' before being beached or bashed."*

Technology is moving from invention and exploration to adoption and integration by the world at large. At such times, success takes more than the right idea. The idea must be heard above the noise in time to build momentum while it still matters. This makes the task of winning more like flying than surfing — if you don't go fast enough or can't sustain a minimum speed you will fall out of the sky. There are now thresholds you must cross in order to succeed.

It's always scary to commit when you don't know where things are going. But it's the only way you can win. If you truly just "surf" looking for the wave to come in you may have a good ride, but you won't end up with anything of lasting value. If what you want is to become relevant and stay that way, then at some point you need to make the commitment to apply what it takes to get off the ground and stay there.

THE REALITY

We are moving from a world that is dominated by technological innovation into one that will be shaped by finding methods to deploy that technology so that people who aren't in love with it will find it irresistible anyway. During this transition, markets will arise that will be at least an order of magnitude larger than what have gone before. In fact, they will be too large to be dominated by any one or two companies. Niches in this new market will be many times larger than the entirety of the previous markets. In a few years we will talk of these niches as whole new industries.

The secret to winning with minimum resources during this transition is to spot where these niches will be early enough to be there when they start to heat up. But you don't want to be there too early, or you won't have enough resources to stay until they take off. There will be many cases where someone was doing something that looked stupid for years and then suddenly was an overnight success.

> *"There will be many cases where someone was doing something that looked stupid for years and then suddenly was an overnight success."*

History shows that over the long term the big guys rarely win battles like these, so there must be some source of power other than "brute strength" that ultimately will win. There is, and it comes from knowledge coupled with perspective and the understanding of human nature. Look to the martial arts, most of which are based on the Zen principles that time and knowledge of human nature, coupled with focus, is the real source of winning power.

HOW CAN YOU WIN?

So how does this apply to winning in the online world? First, commit yourself to find a path that you can travel with the resources you can bring to bear. Second, build the endurance and personal resources you need to stay on that path long enough to reach the end. If you do that, you almost cannot lose.

How can you know that your path is a winning one, or how long you will need to stay the course? That's where knowledge, perspective and an understanding of human nature come in. If you don't naturally understand human nature, find ways to get the input and knowledge needed to keep yourself on course. The most important resource is a personal network of people that you can talk with and exchange ideas and observations to build knowledge and keep perspective on what is going on.

THE REAL SECRET

When you can call someone and discuss what you are thinking, the result will be much stronger (for both of you).

Such a personal network will be invaluable by letting you know when you should adapt and when you should stay the course. Understanding how people react to technology that will let you choose correctly more often than not. Talking to others who are part of the game can keep you on course.

You also need a grasp of the "outside world" to gain perspective. Only with such perspective can you hope to head for a niche that will become large enough within a few years. You must invest in learning what you need to know.

Since such knowledge can only come from other people, you need to build your personal network to include people who can feed you information on what's changing, how it's working, etc. How can you do this? Simple: get out and travel to where such people are!

THE GATHERING

Once again, we end up at ONE ISP-CON. It's true there are 95 Internet shows this year, or nearly two per week. So it's natural to ask, "What makes this one so different?"

ONE ISPCON is a gathering of the knowledgeable and powerful, and you have a chance to enter their world if you attend. No other show is specifically designed to address the problem of how you can gain perspective, knowledge, and build personal networks, and thus no other show offers you this opportunity.

This year ONE ISPCON will give you direct contact with the chairman of the FCC's Internet task force, who will be directing the creation of eighty historic rule makings to implement the Telecommunications Act of 1996. These rulings will affect the Internet and Intranets dramatically, and you need to be sure you are fully aware of their impact. The representatives from the INTERNIC who will solve the looming Domain Name and IP addressing crises will be there too, giving you their thoughts on how it should be solved. You need to know this stuff, and there's no better place to learn it.

We'll have the most successful ISP builders in the world there to tell you

what works and what doesn't. There simply isn't anywhere else in the world you can go to learn the technical, marketing, and business in's and out's of this business like you will in three days at ONE ISPCON.

For a plane ticket and less than the cost of most new computer toys, you can learn more about all aspects of the ISP business and how the Internet is built than anyone else in the world who didn't attend. Plus you can take a cable car ride to Fisherman's Wharf for lunch, and be back for the afternoon sessions. Then you will have perspective!

At ONE ISPCON you will be able to see the "big picture" and gain perspective based in knowledge from technical, business, and policy people who deal with every aspect of it. This opportunity exists nowhere else, and such knowledge will give you an edge.

To win you need contacts with people in all areas of this business. You need to know what designers think they can build. You need to know how online vendors think the distribution channels are evolving, and how new products can enter them. You need to know how the people who are actually buying products and services are reacting to each one. You need to know what marketing methods are working instead of just wasting money. The people who know these things will be at ONE ISPCON.

In the next few years, many more startup businesses will reach tremendous success than we've seen for some time. For some it will happen rapidly, for most it will take longer than they expected, more energy than they thought, and a good idea executed well, with fewer resources than it really needed. The winners will have many temptations to quit, but will have the perspective to properly evaluate each one.

If you examine the winners, you will find that they have personal networks of people they can talk with to keep track of the larger picture. They will have people they know with whom they can trade favors at critical moments to get past a barrier that would otherwise stop them. Do you want people like this in your personal network? You can't do that if you never meet them! You can call **(303)693-5253** to register. See you at ONE ISPCON!◆

BIG BOARD BRIEFS by Wallace Wang

PRODIGY SOLD

Wallace Wang is the author of *CompuServe For Dummies*, *Procomm Plus for Dummies* and *Visual Basic for Dummies* (all published by IDG Books) as well as *Surfing The Microsoft Network*, published by Prentice-Hall). He also does stand-up comedy in the San Diego area, and has appeared on A&E's "Evening at the Improv" TV comedy club. He can be reached via e-mail at: **70334.3672 @compuserve.com** or **bothekat@aol.com** or **bo_the_cat@ msn.com**

To no one's surprise, IBM and Sears have sold their stake in Prodigy to International Wireless Inc., a group of Prodigy executives and various investors. After sinking more than $1 billion in this joint venture, both IBM and Sears reportedly sold their stake in Prodigy for less than $200 million, thus continuing their track record of losing money in projects they have no idea how to market.

Fortunately, Prodigy's new owners have a unique background that may spell good tidings for Prodigy. International Wireless is a global communications company that operates a cellular phone business in Africa and actually has a fledging online service there called Africa Online.

A second major investor in Prodigy is *Grupo Carso SA*, a Mexico-based conglomerate controlled by Carlos Slim, the chairman of Telmex and considered to be the richest man in Mexico. Together with Prodigy's own executives, International Wireless and Grupo Carso SA plan to prop up the ailing online service with loads of cash and make it a contender against America Online and CompuServe once more.

PRODIGY EXPANDING OVERSEAS

To survive in the cutthroat online industry, Prodigy plans to tackle new markets that the other online services seem to be ignoring. Already Prodigy has launched Prodigy International, a new service that lets Prodigy members access European online services via a Prodigy Web site that acts as a gateway to the European Services (visit **http://www.inter nationalink.com**).

Some of the services that Prodigy's American members can access include *Italia On-Line* (owned and operated by Olivetti, the Italian computer hardware and telecommunications giant), two German produced services, *Uni-Online* and *Focus Online*, which provide German lifestyle and youth-culture content, and the French service *Club Internet*.

"The agreements we have put in place in France, Germany and Italy are just the beginning of an important new phase of Prodigy's business development," said David Friedensohn, Prodigy's Vice President of Business Development. "With our Internet strategy, we can build alliances around the world today."

MSN ONE STEP BEHIND PRODIGY

Microsoft has been stalking the number 3 spot occupied by Prodigy; now, MSN too is evolving towards the Web. Microsoft has taken its MSN news service out of the Microsoft Network and put it at **http://www.msn.com/news**.

Current Internet users can receive unlimited access to all MSN content and services for a flat fee of **$6.95** a month. A special price of **$39.95** for one year offered until Aug. 31, 1996.

Microsoft also signed an agreement with Nippon Telephone & Telegraph Corp. to bring The Microsoft Network to Japan. Microsoft is currently negotiating with several European communications providers to bring the world of Microsoft to the European continent.

Perhaps Microsoft is trying to head off America Online's own expansion in the international market. America Online recently went online in Canada, the United Kingdom, Germany, and France, simply calling themselves "AOL" to avoid antagonizing European customers with their "American" identity.

DELPHI SOLD BACK TO ORIGINAL OWNER

In October of 1993, The News Corp. bought *Delphi Internet Services*, a tiny online service with a fanatically loyal following and the distinction of being the first online service to bring complete Internet access to the online community.

But the online world moves quickly, and after MCI Communications Corp. pulled out of a deal with The News Corp. to develop a new online service built around Delphi, Delphi slowly sank from sight. The News Corp. recently sold the service back to Dan Bruns, former CEO of Delphi.

"It's a business that I'm very familiar with. News Corp. seemed willing to sell it and they're interested in seeing me make something out of it," Bruns said. "There's a good-sized base of loyal subscribers and the opportunity to have somebody manage it who wants to continue to support it."

Bruns said he bought the Cambridge, Mass., service with a group of investors but declined to say who they were or how much Delphi cost.

Delphi currently has approximately 50,000 subscribers, roughly the number of people that America Online signs up every six days.

The Industry's First, Fastest, and Most Complete V.34 Modems.

Will Delphi survive, and does anyone really care any more? About the only advantage Delphi has over Prodigy is that Delphi has almost always turned a profit.

AT&T JOINS FORCES WITH CIS AND AOL

AT&T signed agreements with both CompuServe and America Online, giving AT&T's Internet customers reduced rates when they subscribe to either online service. The deal enhances AT&T's position as a value-added Internet provider (not merely a clueless Internet provider). It also gives CompuServe and America Online access to a lot of Worldnet users who desperately want to access the Internet even if they don't have a clue what it might be or do for them.

PRODIGY BECOMES AN INTERNET PROVIDER

Prodigy has announced a $1-per-hour Internet access service called *Access Net Direct* at http://www.and.net. As usual, Access Net Direct is available to Windows 95 and Windows 3.1 users, but Macintosh users will have to wait until later this year before they'll be allowed to use Access Net Direct.

AMERICA ONLINE IN JAPAN
America Online has allied itself with Japanese trading company *Mitsui & Co. Ltd.* and *Nihon Keizai Shimbun Inc.*, to start a Japanese online service by the end of 1996. AOL will own 50 percent of the joint venture, dubbed *AOL Japan K.K.*, which will feature Japanese language content. Mitsui will wind up owning 40 percent of the new company while Nihon will take a 10 percent equity position. The two Japanese companies will invest more than **$56 million** in the venture. Also, Mitsui has bought approximately **$28 million** of convertible preferred stock in America Online.

PIOUS PEDOPHILE ONLINE

A former preacher accused of having sex with boys he met online has been extradited from Pittsburgh to Charlottesville, Virginia. Thirty-three-year-old Barry W. Katzer is charged

with three counts of having sex with a child, one count of taking indecent liberties with a child and one count of displaying child pornography.

Katzer, a former Seventh-Day Adventist minister, also has pleaded guilty in Maryland to having sex with a 13-year-old boy. As a result of that guilty plea in February, he was sentenced to 16 months in jail, according to officials in Montgomery County, Maryland. Police believe that Katzer met the 13-year-old and a 15-year-old boy in a chat room on America Online last August.

COMPUSERVE IN OUTER SPACE

American astronaut Shannon Lucid, who's spending five months on Russia's Mir space station, is keeping in touch with family and friends via CompuServe e-mail. Lucid, a 53-year-old biochemist from Bethany, Oklahoma, is receiving messages on her laptop computer at the Moscow Mission Control Center, which allows uplinking messages and downlinking Lucid's responses as orbits and message traffic scheduling allow. While America Online is conquering the United States, at least CompuServe has that all-important outer space market all to themselves.

MORE CHAOS ON AMERICA ONLINE

In South Brunswick, New Jersey, two 16-year-olds are accused of posing as billing representatives for America Online and stealing at least 15 credit card numbers to buy $15,000 worth of merchandise ranging from computer equipment to cymbals. The boys are charged with 39 counts of possession of stolen property, theft and attempted fraud.

Police believe the boys obtained a program designed by computer hackers to flimflam AOL customers. It sends a message to users saying they will be cut off if they don't type in their name, credit card account number and computer service password.

FINDING YOUR FRIENDS ON AMERICA ONLINE

One of the most frustrating parts about belonging to an online service is trying to find your friends when you're online. While you're in one forum, your friends may be in an entirely different forum and neither of you will know it.

To solve this problem, America Online has introduced a new *Buddy List* feature (Keyword: `Buddy`). Just give America Online a list of your buddies and whenever one of them signs on while you're using America Online, you'll receive a message. That way you can contact your friends online the moment they connect.

You can restrict your own name from anyone else's buddy lists so no one will be able to tell when you connect or disconnect from America Online. Of course, you can still put your name on your friends' buddy lists. That way only your friends can tell when you're using America Online.

You have to admire America Online for finding creative ways to keep people online. At least their marketing department may be doing their job, even if their technical support staff seems to be lagging at times.

COMPUSERVE EMBRACES THE WEB

Along with Microsoft and Prodigy, CompuServe has now announced plans to phase out their proprietary software by the end of the year and move its online service to follow the open standards of the Internet. By following Internet standards, CompuServe can redirect their efforts towards providing useful content instead of building software that no one really cares about.

"By acquiring, customizing and deploying fundamental technology, we can free most of our resources from the labors of building architectural platforms and focus them on providing the unique added value that the customer needs — today and into the future," said Bob Massey, CompuServe's president and CEO.◆

BOOK BYTES by L. Detweiler

by David Hakala,
Editor at Fault

Special Edition: Using CGI
by Michael Erwin and Jeffry Dwight
1996, QUE Corp.
830 pages, **$59.99**
ISBN 0-7897-0740-3
http://www.mcp.com/que
(800)716-0044 or **(317)361-5400**

PLUG ALERT! Michael Erwin is one of ***Boardwatch's*** most cherished columnists ("Publishing on the Web" and "Web Servers Dissected"). Jack Rickard rips Mike's copy from my hands each month, then disappears for three days to "enhance" our Web site. So it is with great pleasure and a bit of bias that I review Mike's first book.

Well, OK... it's half Mike's book – maybe a tad less. I know modest Mikee won't let me grab all the credit for him. Co-author Jeffry Dwight is the CEO of ***Greyware Automation Products*** (http://www.greyware.com), a consulting firm specializing in Windows NT support and custom Internet applications. Thirteen other people, mostly software engineers, Web designers and others who live and die by CGI, contributed chapters to the book.

The 3.5-pound progeny of this expert team is the definitive guide to CGI (Common Gateway Interface), the Internet specification for programs which can be executed on a server by a command received from a Web browser. CGI-compliant programs, usually written in C or Perl, are the Web's equivalent of "door" programs found on BBSs. They bring interactivity and "intelligence" to the otherwise static documents of the Web. Games, page counters, order-entry systems, database interfaces, animations, clickable images and thousands of other applications rely upon CGI.
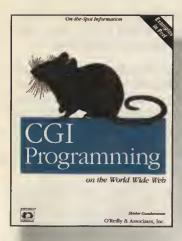
The 28 chapters are divided into eight sections. "Fundamentals" methodically and lucidly explains what CGI is, whence it came and how it fits into a Web site, plus the tools used to create CGI programs on Apple, Unix and Windows sytems. "Application Development" devotes three chapters to the theory of CGI application design, basic CGI elements and the HTML/CGI user interface. "Programming Examples" include simple scripts illustrating CGI's utility; forms-processing code; how to modify a "borrowed" CGI script and handle custom image maps; and the use of MIME (Multipurpose Internet Mail Extensions) with CGI to deliver multimedia features via the Web. "Search Engines" include CGI-based indexing systems, WAIS applications, database query scripts, "robots" and Web crawlers, real-time generation of HTML documents, and Server-Side Includes (SSI).

"Interactive HTML Documents" include person-to-person interaction (chat, WWW Interactive Talk), HTTP cookies (see June's "Publishing on the Web"), audio and video applications and Webcams. "Tips and Techniques" includes chapters for Perl, Visual Basic, C and C++, Java and Applescript. "Polishing CGI Scripts" covers testing and debugging, error handling routines and security issues. The final section is one chapter, "Learning from the Pros," in which Dwight provides a wealth of URLs from which the CGI programmer can obtain freeware scripts and utilities, tutorials and sample code, and study the work of master CGI programmers.

The appendices cover the bundled CD-ROM, which includes a complete tool chest of utilities: HTML and graphics editors, the Java Development Kit and many handy scripts and CGI utilities. The disc's interface includes HTML links to the programs on the disc as well as external Internet resources.

The book is perfectly written and designed for harried programmers who need instant help, with highly legible code listings, pertinent "tips" boxes and enlightening screenshots. If you plan to use CGI – as every webmaster worthy of the title does – replace your mouse pad with this essential reference.

CGI Programming on the World Wide Web

By Shishir Gundavaram
1996, O'Reilly &
Associates Inc.
433 pages, **$29.95**
ISBN #1-56592-168-2
(800) 889-8969
http://www.ora.com

Based on a few subtle clues in this book, the author Shishir Gunda-varam appears to be a "whiz-kid" who collaborated with his college advisor in writing it. One of the CGI form examples (p.55) has him entering his age in one of the blanks: 22. He credits his boss, Dyung Le, for suggesting the idea for the CGI book in 1995 but also "giving me an opportunity to develop software right out of high school." Whatever his age, Gundavaram does not flaunt any credentials in the book, perhaps preferring that it speak for itself, which it does admirably.

As Gundavaram notes, in 1995 there were virtually no CGI books available, and this year has seen an explosion of them. We find his to be one of the most substantial of the lot, per page and in bang-for-the-buck, although readers should keep in mind that it is entirely Perl-focused.

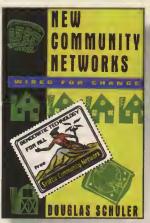Gundavaram includes the CGI USENET FAQ — which he coauthored — in an appendix, as well as a plethora of CGI resources around the Net. His selection of examples depict the exact problems that readers are likely to be interested in: guestbooks, surveys, quizzes, mail gateways, relational databases, sockets, Archie, animated clocks, games, a calendar, etc. Readers may want to obtain his examples first at **ftp://ftp.ora.com/published/oreilly/nutshell/cgi**. The discussion of plotting and graphics utilities is very adept and thorough. The chapter on relational databases is well done. Gundavaram wrote an ambitious and impressive Perl 5 library module called *Sprite* that allows manipulation of file-based databases using SQL-like syntax. He also wrote a useful syntax checker called *CGI Lint*.

Gundavaram is a little weak in describing the rationale of the CGI standards and the pros and cons of using certain features of the protocol based on compatibility issues. He does note when he is discussing a feature whether it is supported by all versions of the protocol, but a full, self-contained description of all the variations in the implementations and their impact on design decisions would be priceless for programmers. Regrettably, at-a-glance overall summaries and appendix tables are rare, and those that exist tend to buried in the prose (status codes, p.48, form tags, p.58).

Gundavaram tends to just plunge in and describe everything by example, preferring to immediately present the code before preliminary explanations, descriptions, or overviews. This may leave the reader a bit confused about some of the aspects of CGI covered (especially the treatment of "saving state"), but the code does work as advertised. Other niggling points: little attention to concurrency (transaction processing) and processor load issues. He does shine in his line-by-line descriptions (e.g., regularly dissecting his complex regular expressions character-by-character) that leave nothing to the imagination as far as the code goes.

New Community Networks: Wired for Change

By Douglas Schuler
1996, Addison-Wesley
Publishing Company
528 pages, **$26.85**
ISBN #0-201-59553-2
http://www.aw.com/cseng
(800) 822-6339

Schuler is a chairperson of Computer Professionals for Social Responsibility (CPSR) and a founding member of the Seattle Community Network (**http://www.scn.org**), a mid-size freenet. Schuler gives examples and anecdotes in the book based on SCN but the book is generally applicable to any person or organization planning a community network. Its emphasis is on policy, rationale, and concerns rather than comprehensive and exhaustive step-by-step how-to advice. Schuler writes in the preface, "This book is not intended to be a cookbook for community networks. The hardware, software, and development methodology are all indispensable, of course, to creating community networks, but the most important aspects of a community network, to my mind, are the involvement of community members and organizations in the process and the ability of the system to address real world problems using primarily real (nonprofessional) people to do it."

The book has a textbook style layout, making it an attractive reference for courses in the subject. The back blurb somewhat presumptuously asserts, "This book should be read by government officials, librarians, policy analysts, educators, journalists, social service administrators, students, social and political activists, and anyone concerned about our communities and the uses of technology in our society." It seems that authors are aiming to achieve the status of "must read" in this category, and Schuler comes fairly close for the audience he targets, which may not be aware to the extent that computerized community networks are already penetrating society. Schuler clearly writes at times from an academic point of view, taking jabs at Rush Limbaugh and "the inherent bias of the free market." Jaded, obsessive net-surfers are apt to be unimpressed by the sometimes pedantic style.

Schuler profiles various examples of community networks as case studies, including the Santa Monica PEN project, Community Memory in Berkeley, the Cleveland FreeNet, and the Big Sky Telegraph system in rural Montana, only some of which are web-based. The coverage of the book is mostly at a high level. He includes a comprehensive appendix with a large list of organizations and contact points in many categories, largely by e-mail address and telephone. Web URLs are somewhat scarce in this book. Schuler is strongly interested in the community network as a key tool in an "infrastructure of democracy." The book is packed with references and citations and will serve very well into the future as a research volume and starting point for researchers and students, but readers looking for very specific steps or tips should go elsewhere. ◆

NII/SUPERNet: FREE 24 Mbps Wireless Bandwidth for the Public

by Matthew Lubanko

Like a comic book hero from Planet Krypton, the NII/SUPERNet, an abbreviation for *National Information Infrastructure/Shared Unlicensed PErsonal Radio Network*, may change the course of a mighty river — the information that flows over the Internet.

Today the Internet relies on wired networks. Tomorrow, perhaps as soon as the summer of 1997, NII/SUPERNet may carry some of that traffic over wireless local area networks (WLAN). The NII/SUPERNet, under the supervision of the Federal Communications Commission (FCC), will allow unlicensed equipment access to 350 megahertz of spectrum at 5.15-5.35 GHz and 5.725 - 5.825 GHz. In Part 15 of the FCC rules, NII/SUPERNet will permit spectrum re-use and will protect other unlicensed products from interference.

In an ideal world, as spelled out under the "universal service" provision in the Telecommunications Act of 1996, the 5.15-5.35 GHz and 5.725 — 5.825 GHz spectra will remain open to everyone. Unlike local cellular telephone licenses which the FCC sold in the past, no single company, or consortia of companies, will buy and own this spectrum. No dominant technology will force newcomers to fall in line or fall off the trail. No users of these spectra will have to pay an entrance fee to local telephone companies.

NII/SUPERNET WILL BE ANYONE'S TO USE

Too bad this is not an ideal world. The rules governing NII/SUPERNet have yet to be written. Only two authors have contributed suggestions to the rule books so far.

One is *Apple Computer*, which filed a petition (*RM-8653*) on May 24, 1996. The other is *WINForum*, a collection of companies including Lucent Technologies, Motorola, Ericsson, Northern Telecom, Spectralink and others, which filed petition *RM-8648* on May 15, 1996.

In its petition Apple proposed an all-inclusive band, including long-range community networks for the upper spectral band. WINForum proposed high-speed LANs for the lower band. The FCC will begin reviewing these and other proposals starting July 15. Anyone wishing to rebut or support these petitions, or suggest rules of his or her own liking, must write to the FCC by July 15 (See sidebar.)

WIRELESS TECHNOLOGY ALREADY DEVELOPED

Wireless networking is not new. WINForum, with Lucent Technologies as its ringleader, is hardly a newcomer to wireless local area networking.

Since the late 1980s, AT&T (long before it spun off Lucent and NCR) has been working on a wireless local area network known as WaveLAN. The WaveLAN is a DSSS (Direct Sequencing Spread Spectrum) radio that operates at 2 Mbps — very fast by comparison to today's WLAN.

Since 1990, AT&T and others have sold WaveLAN 915 MHz products in the U.S, Canada and Mexico. Furthermore, WaveLAN 2.4 GHz products have been sold in the U.S. and at least 40 other countries since 1992.

By deploying WavePOINT and WaveLAN Network Interface Cards, users have instant LAN connections in places such as retail stores, warehouses, and hospitals where wiring is costly and difficult to install. WaveLAN has offered, and continues to offer, a cost effective solution for wireless use of these networks.

Those relying on LANs can reach networks in such difficult-to-wire places as historic buildings, or buildings where drilling holes for wires might kick up some dormant asbestos. LANs also prove useful in offices, including banks and manufacturing companies, where desks and people are frequently moved. WaveLAN permits free movement of people and networking technology without astronomical expense.

Temporary LANs also come into play at retailers, airlines, and shipping companies during peak periods. Exhibitors at trade shows also use temporary LANs. For many applications WaveLAN point-to-point links can, on the basis of cost, compete with wired LANs; they will also save expenses on leased lines.

Furthermore, High-Performance Radio LAN (HIPERLAN), under specifications from the European Telecommunications Standards Institute (ETSI), is designed to operate in two distinct frequency bands: 5.15 GHz to 5,25 GHz, using a 1 watt transmitter; and 17.1 GHz to 17.3 Ghz using a 100 MW transmitter.

The 5GHz layer, using five different channels (three on the lower 100 MHz of the band, and two within the upper 50MHz of the band), can operate at 5 Mbps. Because the 5 GHz band can grant users equal access to the spectrum, it can support a wide range of applications.

NII/SUPERNET NOT TIED TO EXISTING STANDARDS

The proposed NII/SUPERNet will differ from the above in several ways: it has no standard products; and the spectra slated for FCC allocation are not now used for WLANs. Parts of these spectra have been used by the U.S. Department of Defense for radar systems. The Federal Aviation Administration uses the 5.0-5.1 GHz band for microwave landing systems for aircraft. And fixed satellite services use the 5.10-5.35 GHz band.

NII/SUPERNet will make greater use of these spectra, without interfering with those who got there first. Using technology available today, NII/SUPERNet may carry *24 Mbps*, enough to transmit a 1,000-page document in three seconds. Even T1 lines, with transmission speeds of 1.544 Mbps, will seem slow by comparison. Since MPEG-3 compressed progressive video requires data streams of 18 Mbps, NII/SUPERNet will carry what many current systems cannot: voice, data and video.

"The NII Band can create those (final unconnected) links (in a worldwide network), making it possible for students in a classroom in Nebraska to watch archaeologists retrieving artifacts from an archaeological dig half-way around the globe, while also pulling up information from the Library of Congress on the region's history, geography and climate," said David Nagel, senior vice president of worldwide research and development at Apple Computer Inc., before the U.S. Senate Committee on Commerce, Science and Transportation.

Portability may also make NII/SUPERNet a first choice for hospi-

tals. No longer will doctors have to wait for data or images "from upstairs" or from some other mainframe room in another part of the hospital. Wireless notepads will be able to call up information at a patient's bedside. X-rays, CAT scans, PET scans, MRI data, lab reports and other information will be delivered in seconds. Decisions for patient treatment, as a result, will be made on the spot — based on accurate, up-to-the-minute information.

YOUR INPUT WILL HELP SHAPE THE NII BAND

In years to come, what will an unlicensed wireless spectrum mean to networked computing? And how might it affect Internet service providers who've targeted rural areas as their open frontier markets?

That depends on the petitioners — WINForum and Apple — and *you.*

Perhaps you have an idea of what you want NII/SUPERNet to become. Maybe you'd like to comment on the petitions filed by Apple and WINForum (See the petitions at **http://www.fcc .gov/oet** or call **(202)857-3800** to order paper copies).

The WINForum petitions propose a 0.1 watt transmission power limit to NII/SUPERNet. This would limit signal transmission to a few yards – severely hamstringing a potentially revolutionary wireless application.

Apple suggests a 1 watt transmitter power limit, which would enable unlicensed devices to cover distances of 10 to 15 kilometers (6.2-9.3 miles) or more, for its proposed community networks.

Whatever you think of these proposals, there's still time for you to lend your minds and voices, and perhaps make a difference. Just write and send your comments by the *July 15* deadline. (Call (202)418-0190 for details).

The FCC will not accept faxes or e-mail for these comments. Only snail-mail with a signature will count. ◆

THIS MONTH'S LIST by David Hakala

THE 100 LARGEST U. S. COMPANIES ON THE WEB

David Hakala first appeared in *Boardwatch* in March, 1989. From May of 1991 until he assumed the position of Editor at Fault at *BW* in April, 1995, David wrote for a number of trade and mainstream journals, co-authored the book *Hot Links* with Mark Eppley, CEO of Traveling Software, and penned his own book, *Modems Made Easy*, which entered its second edition in March, 1995. In his spare time, David enjoys science fiction, billiards, country-western music and catching crayfish with his son, Tony Eric. David can be reached at mailto:david.hakala@board watch.com or at (303)973-6038.

Whatever happened to "real" reality? I'm beginning to read Plato again; his argument that nothing perceived through our senses can possibly be real finally makes sense.

This month, we have a virtual research firm — **@ Internet Marketing Corp.** (just @ to their clients) — tracking the virtual marketing efforts of the biggest virtual "persons" in the world. The corporations on the Web100 List have combined revenues of over **$100 billion**. Http://fox.nstn.ca/~at_info/ is the place to go if you wonder what big businesses are doing with the Web.

For the most part, they seem to be providing workfare for Generation X slackers who like to play with "new media." **Ford Motor Co.'s** Jaguar "showroom" bears this breathless greeting:

"You've arrived! Perhaps it is a long-smoldering desire that has brought you to this point. Perhaps you have been reading the critics' accolades. Or perhaps you are simply an individualist who demands a car with character in an age of anonymity."

Sounds like the introduction to a new round of **Doom**. Of course, the kids who wrote this smarm haven't earned enough in their lives to buy a Jaguar hubcap, so they don't know why people come to this site.

General Motors says its site *"is designed to give you the fullest, most interesting, and up-to-date web experience possible today."* I looked for the videosex button, but all I found was Shockwave, Realaudio, QuickTime and other browser bloaters.

Sam Walton's heirs seriously ask, *"Have you visited your **Wal-Mart** Shoe Department lately?"* It's interesting to learn that I could get Wal-Mart stuff delivered to my home, if only I would relocate to northwest Arkansas, Fort Worth, Texas or Springfield, Missouri.

Texaco, **Amoco**, **Mobil** and **Chevron** had lots of press releases, but none explained why gas suddenly costs $2 a gallon in California.

International Paper surprised me with an actually interesting site. Choose the "You're In Charge" option from their home page and suddenly you're the "Executive Ranger," making multi-million dollar decisions on a new environment-friendly packaging product. Once you've made the tough choices, you can see how other ER's decided. The product, Triton, is in beta testing; the actual course taken by International Paper will be revealed online in August.

The mix of industries is also surprising. Only 7 percent of the Web100 sites are computer technology firms. Smokestack industrial companies account for 42 percent, while the service sector represents 51 percent. Services are further broken down as shown in the accompanying pie chart.
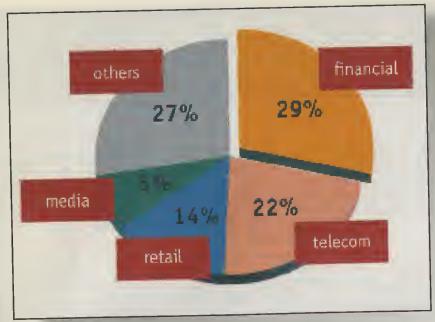
THREE GUYS IN CANADA

The people behind the Web100 are Steven Bonisteel, Campbell Patterson and George Scriban, all from the Kingston, Ontario, area. They all have separate, remotely related businesses and convene once a month to work on the Web100.

Bonisteel ran the Mystery BBS from 1986 to 1988. He spent ten years as a newspaper reporter and

Breakdown of Web100 Services Sector

"Then there's Metropolitan Life (`http://www.metlife.com`): they've got a nice site designed with the help of AGENCY.COM and MetLife's Webmistress, Frances Wu, is totally juiced about the whole interactive thing. Talk to them and it's hard to believe you're dealing with a company that has a heftier bureaucracy than a small country."

The @ team is a "real" virtual corporation. "We do almost all our work online, meeting only when we need to make fun of Campbell's receding hairline, George's inability to use the brakes on his inline skates and my ex-newspaperman's capacity for alcohol."

The Web100 started as a hobby, but it now brings the @ boys real business. The most avid readers of the site are its subjects – the webmasters of the largest corporations in the world. They come to spy on each other's doings and to see how they themselves are doing. Some of this interest leads to Web design and consulting business.◆

editor, building a reputation as a cyberjournalist. Today, he writes Web site reviews for Point Communications – `http://www.pointcom.com` – and his company, Typecast, provides syndicated content for community newspapers across Canada.

Patterson introduced the IBM PC to Canada while he was a client services VP for J. Walter Thompson Advertis-ing. He's also made Canadians yearn for Labatt's Lite Beer, Sealtest ice cream, McDonald's hamburgers and National Football League memorabilia.

Scriban "is our mandatory X-Generation representative" according to Bonisteel. Scriban is a multimedia developer recently graduated from Queen's University in Kingston, Ontario.

"George is the one who actually came up with the Web100 idea," adds Bonisteel. "Since then, Campbell and I, who formed @ as an online marketing venture, have brought the concept under @'s wing and are providing some useful (we hope) content for others on the Net. I built the Global 100 list that we introduced in May. Campbell focuses on company research. George is preparing the HTML for a June edition that will begin breaking out the FORTUNE 500 list in the various business sectors: tops banks, top manufacturers, etc."

Bonisteel explained the evolution of the Web100. "Initially, we worked on the listings for our own benefit: to keep track of what big business was doing on the Web. Based on the reaction we received from visitors, it seemed clear that there was a significant audience with the same interest. That's why we're essentially re-introducing the site in the next couple months with deeper lists and profiles of the people behind the Web sites on those lists."

Web100 researchers Steven Bonisteel, George Scriban and Campbell Patterson

THE US WEB100 LISTING

Below is the U.S. Web100 for May 1996, including the largest corporations on the World Wide Web, ranked by revenue. There are actually 110 URLs below, counting Web sites of subsidiaries. This list is updated monthly at `http://fox.nstn.ca/~at_info/` where you will also find "top 100" lists for the international business community, industry sectors and other categories. Got an addition or correction? Please `mailto:at_info@fox.nstn.ca`

URL	Company
http://www.gm.com	General Motors
http://www.ford.com	Ford Motor
http://sam.wal-mart.com	WAL-MART
http://www.att.com	AT&T
http://www.ibm.com	IBM Corp.
http://www.ge.com	General Electric Corp.
http://www.mobil.com	Mobil Corp.
http://www.chryslercorp.com	Chrysler Corp.
http://www.mgdtaproom.com	Phillip Morris/Miller Genuine Draft
http://www.prudential.com	Prudential Insurance Co.
http://www.statefarm.com	State Farm Group
http://www.dupont.com	DuPont
http://www.texaco.com	Texaco
http://www.kmart.com	Kmart
http://www.pg.com	Procter & Gamble
http://www.chevron.com	Chevron
http://www.citicorp.com	Citicorp
http://www.hp.com	Hewlett-Packard
http://www.pepsi.com	PepsiCo
http://www.pizzahut.com	PepsiCo/Pizza Hut
http://www.metlife.com	Metropolitan Life Insurance
http://www.amoco.com	Amoco
http://www.motorola.com	Motorola
http://www.spectra.net/mall/aig	American International Group
http://www.foodcoop.com/kroger	Kroger
http://www.dsddhc.com	Dayton Hudson
http://www.lmco.com	Lockheed Martin
http://www.utc.com	United Technologies
http://www.fanniemae.com	Fannie Mae
http://www.ml.com	Merrill Lynch
http://www.jcpenney.com	JC Penney
http://www.ups.com	United Parcel Service
http://www.dow.com	Dow Chemical
http://www.bankamerica.com	BankAmerica
http://www.gte.com	GTE
http://www.ipaper.com	International Paper
http://www.boeing.com	Boeing
http://www.xerox.com	Xerox
http://www.cigna.com	Cigna
http://www.jnj.com	Johnson & Johnson
http://www.loewshotels.com	Loews Hotels
http://www.americandrugstores.com	AmericanStores/American Drugstores
http://www.acmemarkets.com	AmericanStores/Acme Markets
http://www.pricecostco.com	Price/Costco
http://www.cocacola.com	Coca-Cola
http://www.bellsouth.com	BellSouth
http://www.columbia-hca.com	Columbia/HCA Health Care
http://www.fleming.com	Fleming
http://www.amrcorp.com	AMR

http://www.arco.com	Atlantic Richfield
http://www.merck.com	Merck & Co.
http://nestegg.iddis.com/smithbarney	Travelers, Inc./SmithBarney
http://www.nationsbank.com	NationsBank
http://www.intel.com	Intel
http://www.mmm.com	3M
http://www.caterpillar.com	Caterpillar
http://www.nabisco.com	RJR Nabisco/Nabisco Inc.
http://www.nabisco.ca	RJR Nabisco/Nabisco Canada Ltd.
http://www.americanexpress.com	American Express
http://www.homedepot.com	Home Depot
http://www.kodak.com	Eastman Kodak
http://www.mci.com	MCI
http://www.federated-fds.com	Federated Department Stores (FDS)
http://www.weddingline.com	FDS/Macy's WeddingLine
http://www.macysbridal.com	FDS/Macy's Bridal
http://www.ualfltctr.com	United Air Lines/Flight Center
http://www.chase.com	Chase Manhattan/Chemical Bank
http://www.compaq.com	Compaq Computer
http://www.alliedsignal.com	AlliedSignal
http://pat.mdc.com	McDonnell Douglas Aerospace
http://www.jpmorgan.com	JP Morgan &Co.
http://www.digital.com	Digital Equipment Corporation
http://www.bms.com	Bristol-Myers Squibb
http://www.sprint.com	Sprint
http://www.bell-atl.com	Bell Atlantic
http://www.ameritech.com	Ameritech
http://www.niyp.com	NYNEX Interactive Yellow Pages
http://www.ahpc.com	American Home Products (AHP)
http://www.masterlock.com	AHP/Masterlock
http://www.goodyear.com	Goodyear Tire &Rubber
http://www.ti.com	Texas Instruments
http://www.rockwell.com	Rockwell International
http://www2.pcy.mci.net/marketplace/aetna	Aetna Life &Casualty
http://www.sbc.com	SBC Communications
http://www.bev.net/education/SeaWorld	Anheuser-Busch/Sea World/Busch Gardens
http://www.bud.com	Anheuser-Busch/Budweiser
http://www.delta-air.com	Delta Air Lines
http://www.maycompany.com	May Department Stores
http://www.itthartford.com	ITT Hartford
http://www.sysco.com	SYSCO
http://www.disney.com	Walt Disney Pictures
http://www.baynet.com/trimark	Weyerhaeuser/TriMark Development
http://www.viacom.com	Viacom
http://www.uswest.com	US WEST
http://www.raytheon.com	Raytheon
http://www.nationwide.com	Nationwide Insurance Enterprise
http://www.tiaa-cref.org	Teachers Insurance & Annuity Assn.
http://www.northwesternmutual.com	Northwestern Mutual Life
http://www.ashland.com	Ashland Inc.
http://www.ashchem.com	Ashland Chemical
http://www.valvoline.com	Ashland/Valvoline
http://www.apple.com	Apple Computer
http://www.wmx.com	WMX Technologies
http://www.ms.com/MS.html	Morgan Stanley Group
http://www.fcnbd.com	First Chicago NBD
http://www.fccm.com	First Chicago Capital Markets
http://www.fctc.com	First Chicago Trust
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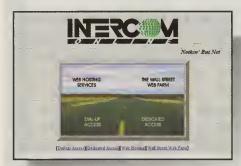## Advertise your website. Call 1-800-933-6038

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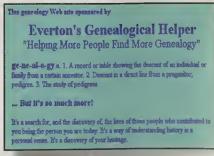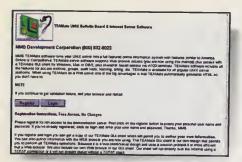
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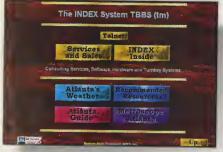
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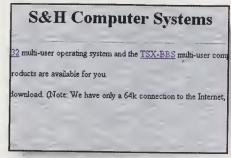
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ROUNDABOUT ODE TO WINDOWS 95

In addition to his weekly syndicated radio call-in show, "Software/Hardtalk," syndicated newspaper columns, magazine writing for *MacUser*, *PC Computing*, *DEC Professional*, *Information Technology*, and his featured "*Inside Track*" column in *PC Magazine*, Dvorak is the author of several best-selling books, including *Dvorak's Inside Track to DOS & PC Performance*, *Dvorak's Guide to PC Telecommunications*, and *Dvorak's Inside Track to the Mac*. John can be reached at *mailto: dvorak@aol.com*

There have been more than a few annoyances in my life recently as I decided to install Windows 95 on an Ambra that was formerly dedicated to OS/2. I had stupidly turned off the OS/2 computer during an OS/2 shutdown before completion. This destroyed OS/2 completely and I had to reinstall it. I had not done a reinstall for some time and when it was complete I realized that once again OS/2 failed to properly identify the Diamond Viper card, leaving me with a 16 color 640 x 480 display on a 21-inch monitor. Just what I needed, that is if I wanted to read the display a mile away. Going to the system icon and trying to correct this was impossible and the special OS/2 driver disks were nowhere to be found. I figured that I'd dump OS/2 on this Ambra and go with Win 95. OS/2 never did work right on the Ambra and no matter what you did you could not get the sound to work. Ironically, the Ambra was designed by IBM.

So I installed Win 95. Now I remembered why I wasn't running Win 95 on this machine. The CD-ROM, an old dog Philips model running off of a 1993 Media Vision SP16, was a slight problem. Win 95 goes through its installation process and bingo decides that the CD-ROM that it has been reading from all along no longer exists. I recall this happening before on another computer on which I tried to install Windows 95. The result of this idiocy is that at the end of the installation Windows 95 suddenly can't read its own installation disk and the installation process drops dead. Keen, huh? Exactly how this fiasco got past quality control at Microsoft is mystifying. If it weren't for the fact that I have a good guy in support to help me with these idiosyncrasies I probably wouldn't run Win 95 and I'd sit and wait for Merlin.

But to be honest I'd rather struggle with Win 95 than OS/2 at the moment because when Win 95 is running it works great and it's far easier to swap peripherals on and off the system than it is with OS/2. Also Win 95 handles the display cards with more acumen than OS/2 and I don't get stuck with 16 colors every time something goes wrong.

I finally got the system running but had to get a new display card because this old Ambra was using a Diamond Viper which apparently is useless with Windows 95. The company is making owners of this card a good deal if they want to swap it for something that works. Anyway, I never could get the sound card to work with Windows 95, although I had it working with Windows 3.1. It never worked with OS/2 either. I should junk it.

Since I still use OS/2, I don't want to get a bunch of hate mail from OS/2 lunatics because of these choices. I've come to the conclusion that OS/2 is a better, more stable environment, but not convenient for people who have to change their system often and who are required to look at a lot of new software. There are so many hours in the day and the days have grown shorter.

The Internet is exacerbating the situation. There is no time to reinstall all sorts of software while learning HTML and server technology. I've been giving a lot of talks and addresses lately (contact the Washington Speakers Bureau at **(703)684-0555**) and like to relate the following story:

Scott McNealy of Sun Microsystems tells his audiences that the computer industry has always accepted the fact that we lose 20 percent of our knowledge base and have to renew ourselves by that amount yearly to stay with the pack. He now believes that this has become 20 percent a month. I've thought about this and agree that the pace has quickened but I sense it to be about 20 percent a quarter. If we sat on our hands for a year and a quarter we'd be know-nothings. The Internet is taking its toll on our time.

The Internet is taking its toll elsewhere too. *TWOBBSCON*, the European version of ONE BBSCON (since wisely changed to *ONE ISPCON*) has folded. Nobody is interested in BBS technology in Europe. It never fully blossomed there, no thanks to the pathetic phone monopolies. But it was trying to make a move. The problem there was always phone access. Horrid X.25 networks and overpriced phone service have severely hampered BBS technology throughout Europe.

Out of the blue British Telecom, which is perpetually rumored to be buying US West, threw a bunch of ISDN systems throughout its areas and other European telecommunications monopolies are doing similar things. All of a sudden the

DVORAK'S RECIPE NOOK

Thoughts on Food Chemistry

And How to Make Good French Fries

People interested in good cooking should study the chemistry of food; it helps you understand a lot of the mystery about cooking. It also keeps you from falling prey to bad habits and bad ideas. For example, I wasn't surprised when it was recently announced that margarine is probably no better for you than butter. I always preferred butter, a natural fat, as opposed to margarine which comes from the lab.

It's obvious to any chemist that margarine isn't healthy once you know how it's made. As we all have been told, so-called poly-unsaturated fat is better for you than saturated fat, right? But what the heck *is* a saturated fat? Saturated by what?

The saturation refers to hydrogen. The saturated fat has hydrogen attached to every spot it can bind to on a fatty oil molecule. The worst saturated fats are coconut, cottonseed and palm oil, as well as most animal fat. The oils with little saturation are corn oil, peanut oil and safflower oil. Olive oils are also good oils but their chemistry is a little different.

Anyway let's take the safest, cleanest, best-for-you (and also one of the most tasteless) oils: safflower oil. Great stuff for cooking. Well, you'll note that you can get a safflower margarine. How do they make the light safflower oil into a spread? Well, they put it into a large vat under pressure and hydrogenate it under catalytic conditions with pure hydrogen.

When I first saw this process I thought to myself that they are not only making the oil into a saturated fat but doing it to such an extreme that the stuff has become as thick as butter. It's the way all modern margarines are made. They change the polyunsaturated oil into a saturated oil.

Now how many decades have passed before someone noticed this procedure and made the public aware of the fact that these products were not "healthy butter?" Too many. It's ridiculous.

Another chemical aspect to oil is something called specific heat. This loosely refers to the ability of the oil to "hold" heat. The higher the specific heat the better something cooks and the less likely it is to soak into the food. The opposite is true for low specific heat "thin" oils.

The best oils for frying have high specific heat. Ironically, the *least healthy* oils and fats tend to have the highest specific heat. SO when you cook with safflower oil, the likelihood that the oil will soak into the food is higher than when you cook with beef kidney fat which is unhealthy. A screwy trade-off. This problem is most noticeable when deep fat frying.

Luckily there is a trick, especially for making French fries, which solves the problem.

Nobody nowadays wants to use beef kidney fat (a classic deep fat fryer oil used historically by the French and others) for deep fat frying, although you may want to try it once to see what things used to taste like. People want to deep fat fry in oil, not fat or even Crisco (another "lab" product).

But the specific heat of oil changes the methodology and requires a technique called *twice cooking*. This style is promoted, with little explanation, in many cookbooks including *The Joy of Cooking*. What happens with a low specific heat oil such as safflower is that when a batch of French fries is lowered into the oil the temperature drops immediately from a perfect 370 degrees to 330 or even less. The oil then takes forever to get back up to temperature, and by the time it does the French fries are slow cooked and mushy. They might also be oily.

To keep this from happening you do a two-step process. You lower the fries into the fryer and cook them just long enough to get them to a higher temperature. This takes about 2-3 minutes. You pull them out of the oil and keep them above the oil to remain at this temperature while the oil heats back up to the ideal 370-degrees. When the temperature reaches 370 degrees again, drop the fries into the hot oil for the real cooking. This time the oil temperature does not drop and the fries get cooked properly. Try it. ◆

potential for great Internet access via a local ISP and ISDN looks a lot better than toll calls to a BBS. Many of the smart BBS operators had already made the move into the Internet. I'm afraid that the BBS movement has transitioned and those who have failed to change by now are going to have more and more trouble. Like I've said before, it's not unlike being stuck in a CP/M world while everyone runs Windows 95.

In the meantime, as the BBS dies before us the online services — which in some ways are glorified BBSs — have taken up the slack. America Online is growing at a 300,000 user per month clip and CompuServe is growing at 200,000 per month. These ridiculous growth figures fly in the face of the Web, which can fulfill most of the functions of the online services for a lot less money. I know more than a few people who have completely abandoned online services since their web bookmarks do much more for them.

Worse, while the Web is accessed through the complex Internet, the online services are accessed through a dedicated network. In California it is almost impossible to get on AOL from 4 PM to about 7 PM. This is just going to get worse. Then there is the AOL browser, which is supposed to be fixed someday. It sucks now and anyone who thinks the Web is anything like what they experience on AOL better rethink their perspective. If I was running AOL, though, I'd keep the Web experience crummy. Why show off the competition on your own service?

Anyway we have to face a reality about the Internet, time consumption and operating systems. Windows 95 for OS/2 users and computer geeks is not half bad. Like Microsoft developers themselves once said, "It sucks less." It has a lot of interesting features and it's nerdy enough to be interesting and easy enough to be usable by a novice. I kind of like it. ◆

Internet 101:

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